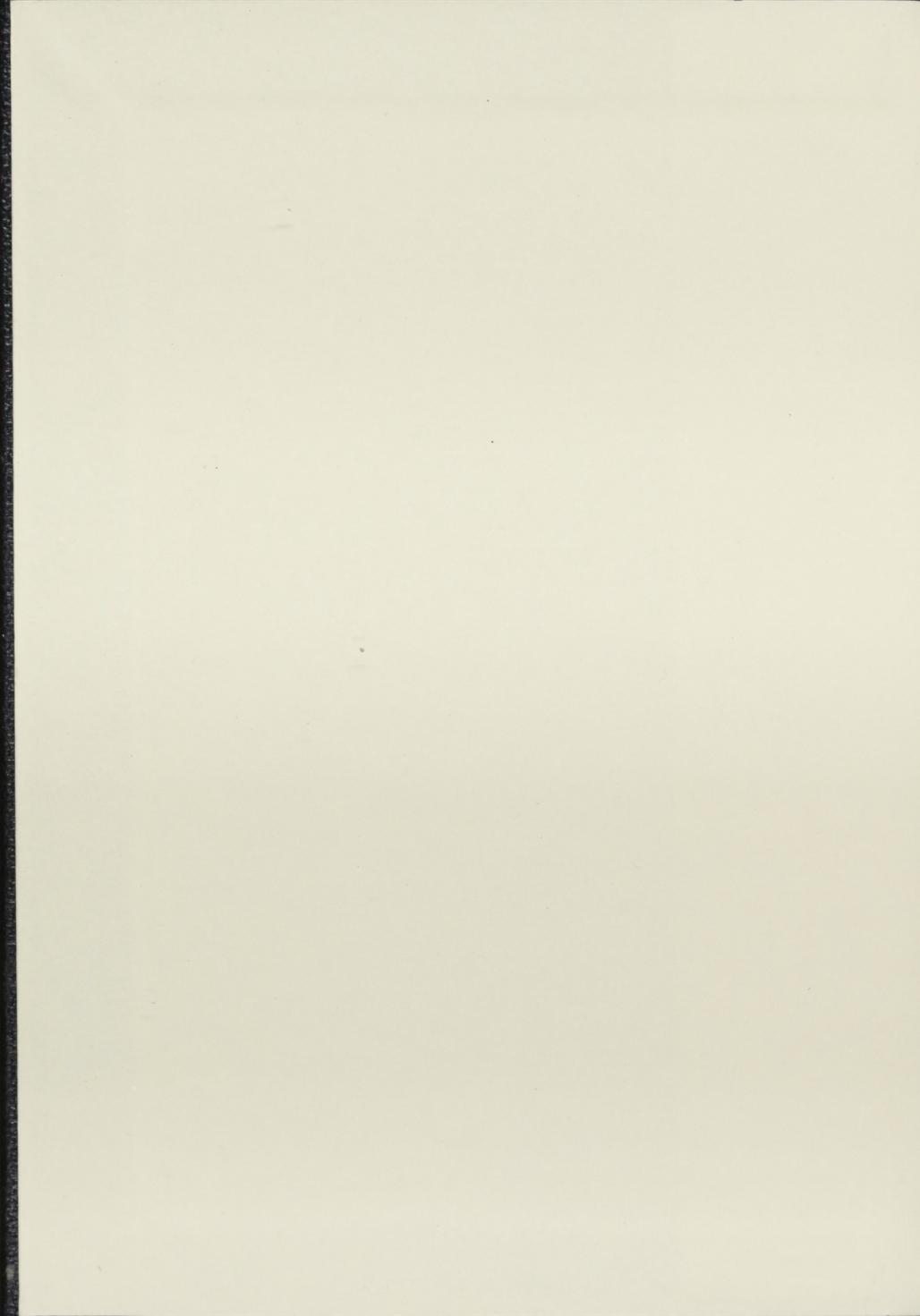
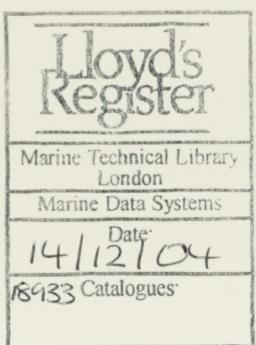
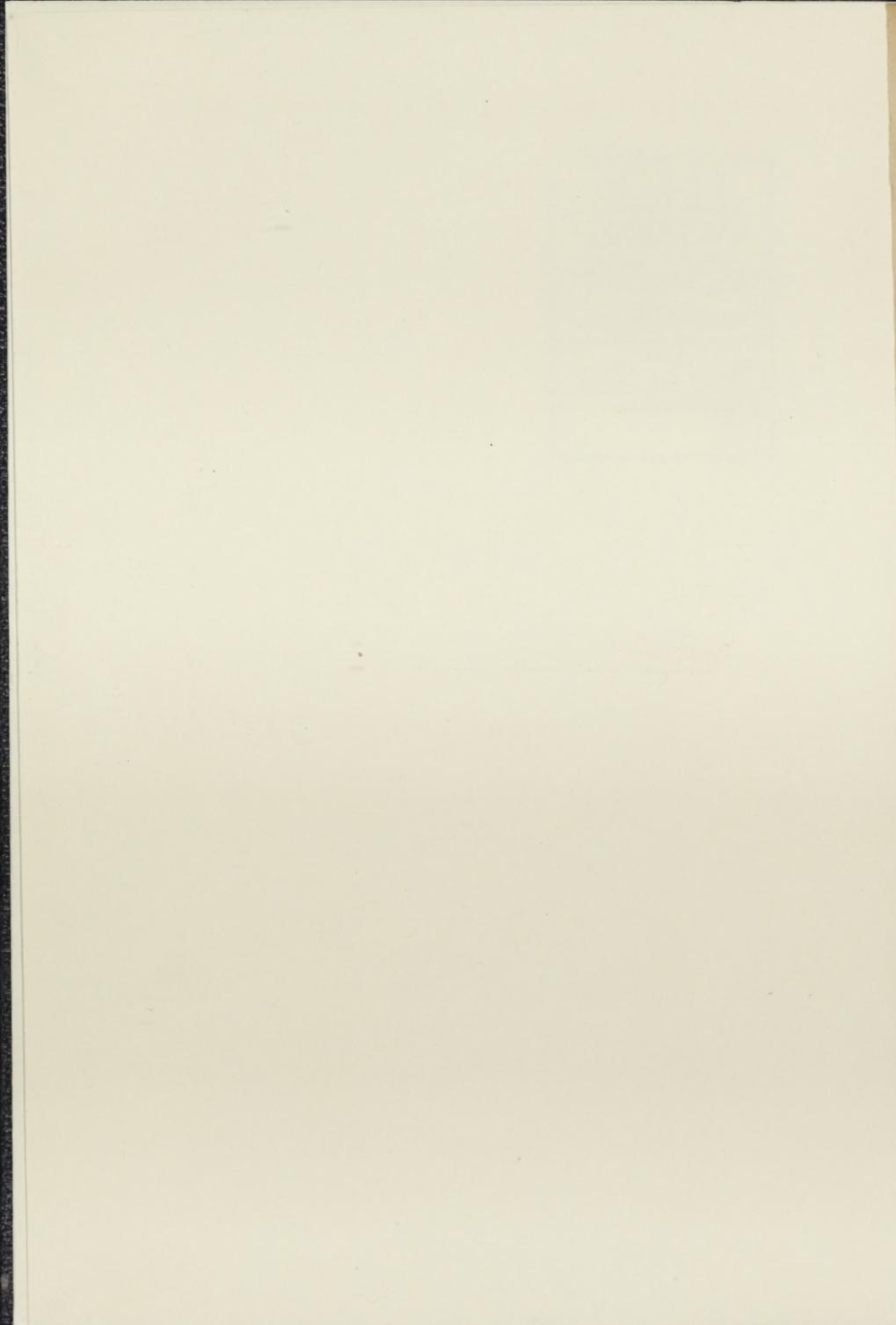
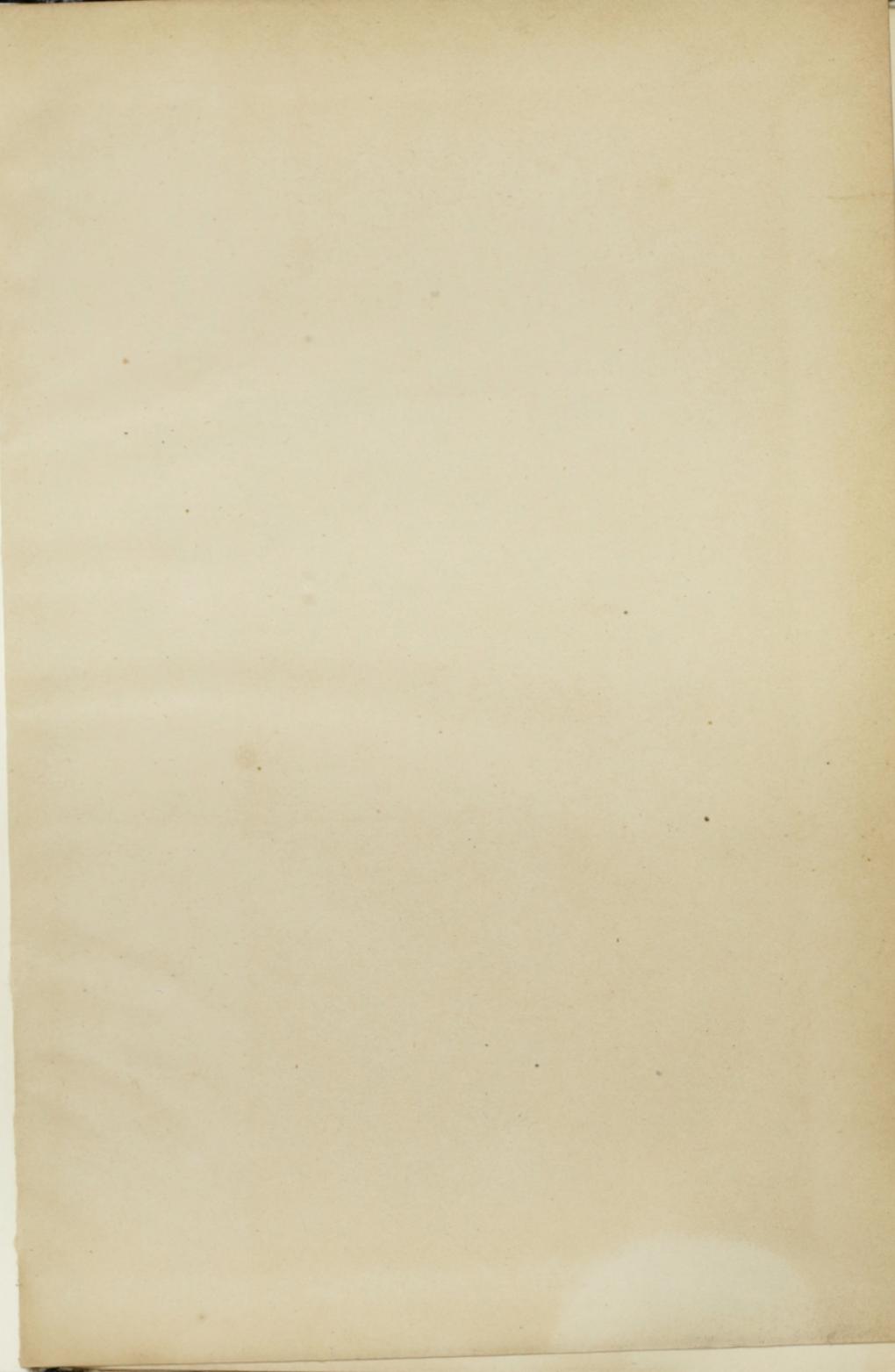


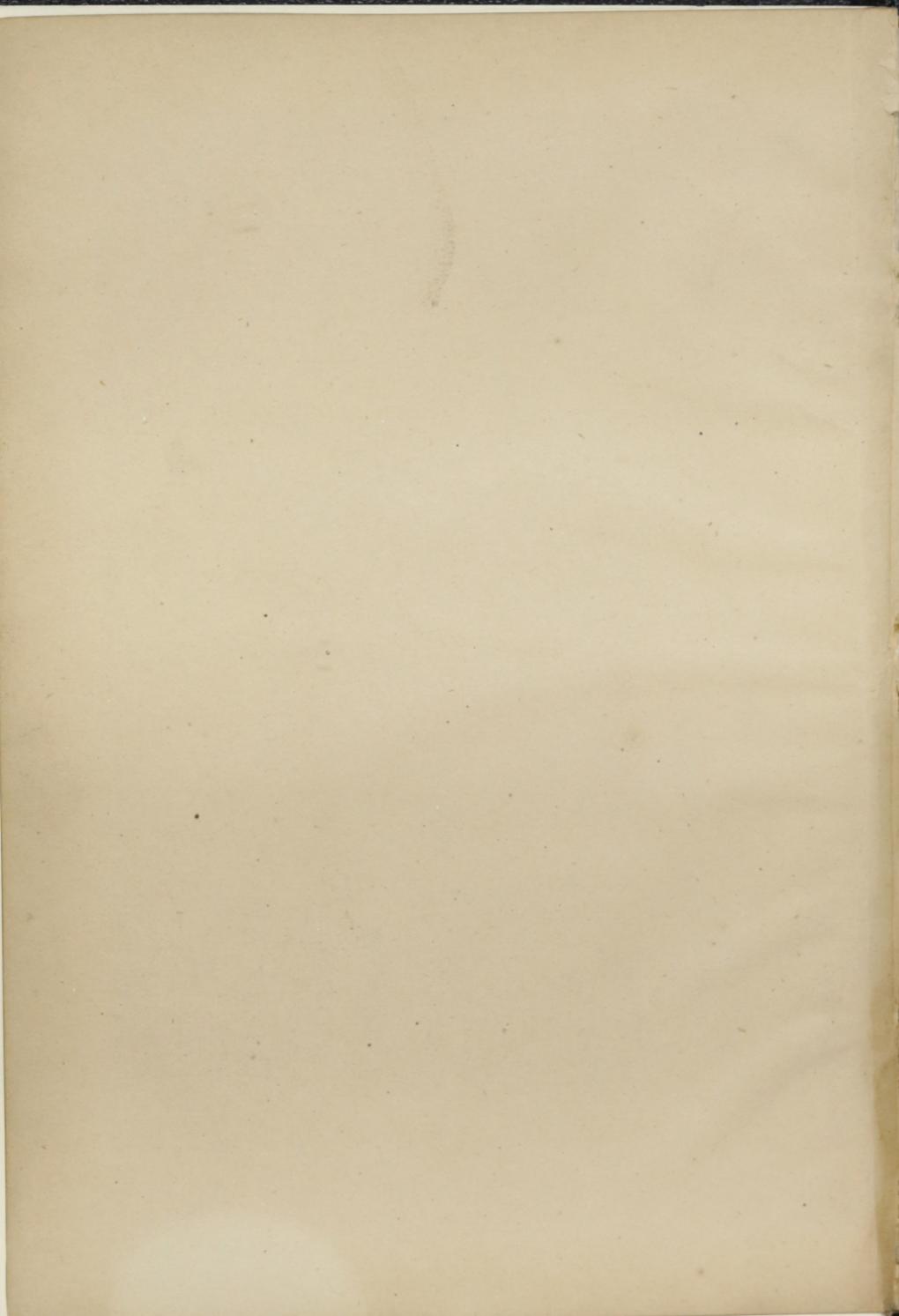
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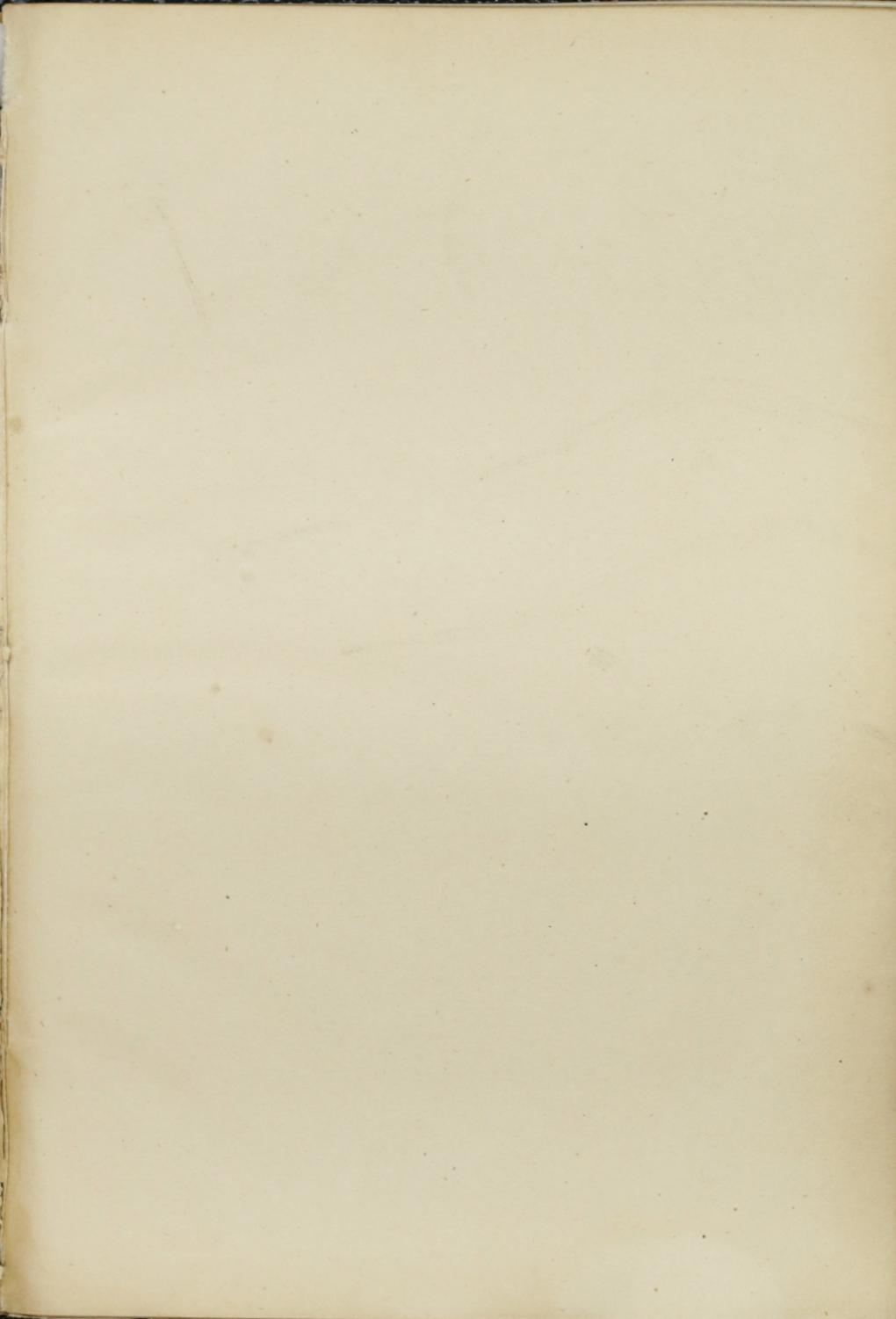


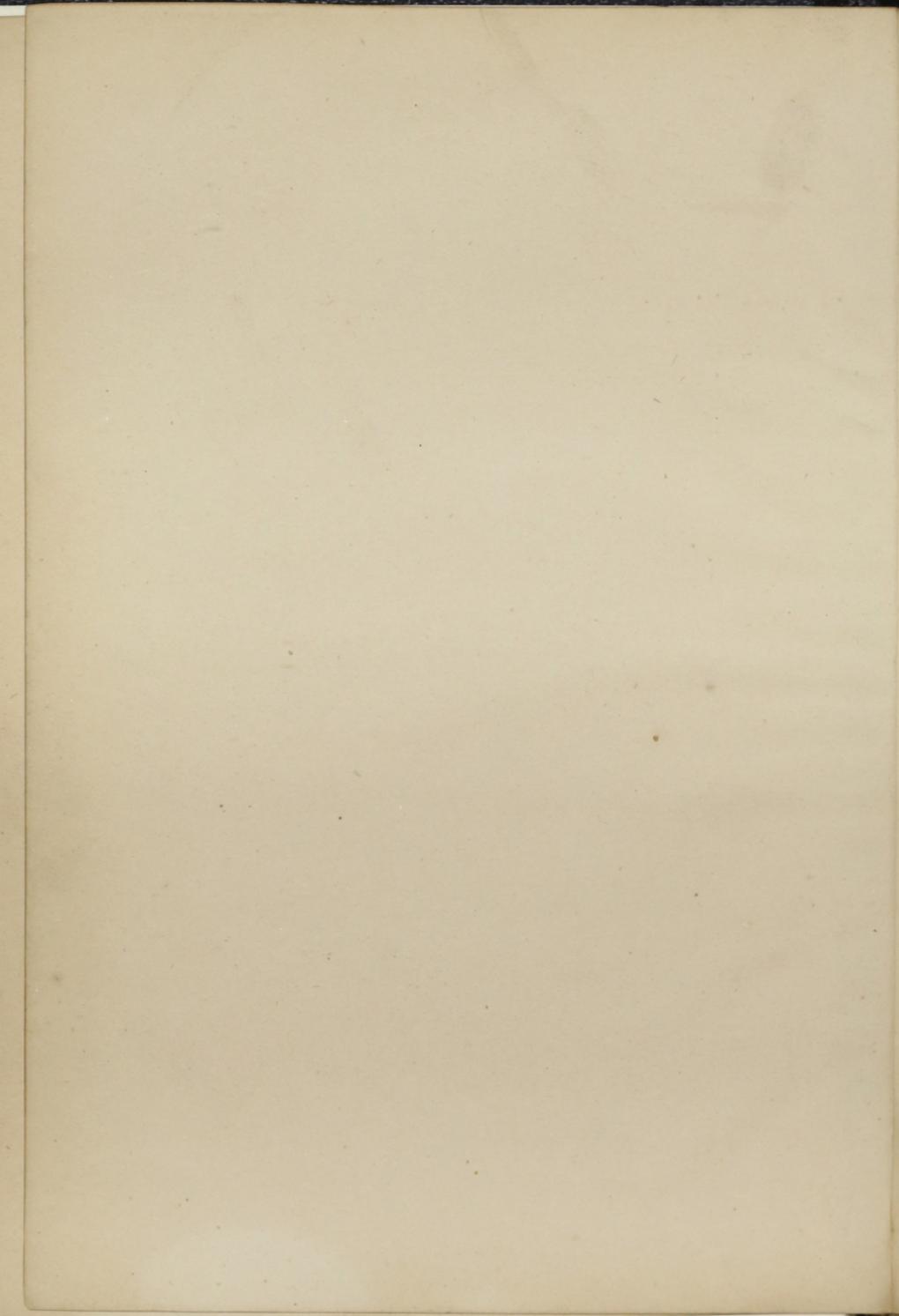


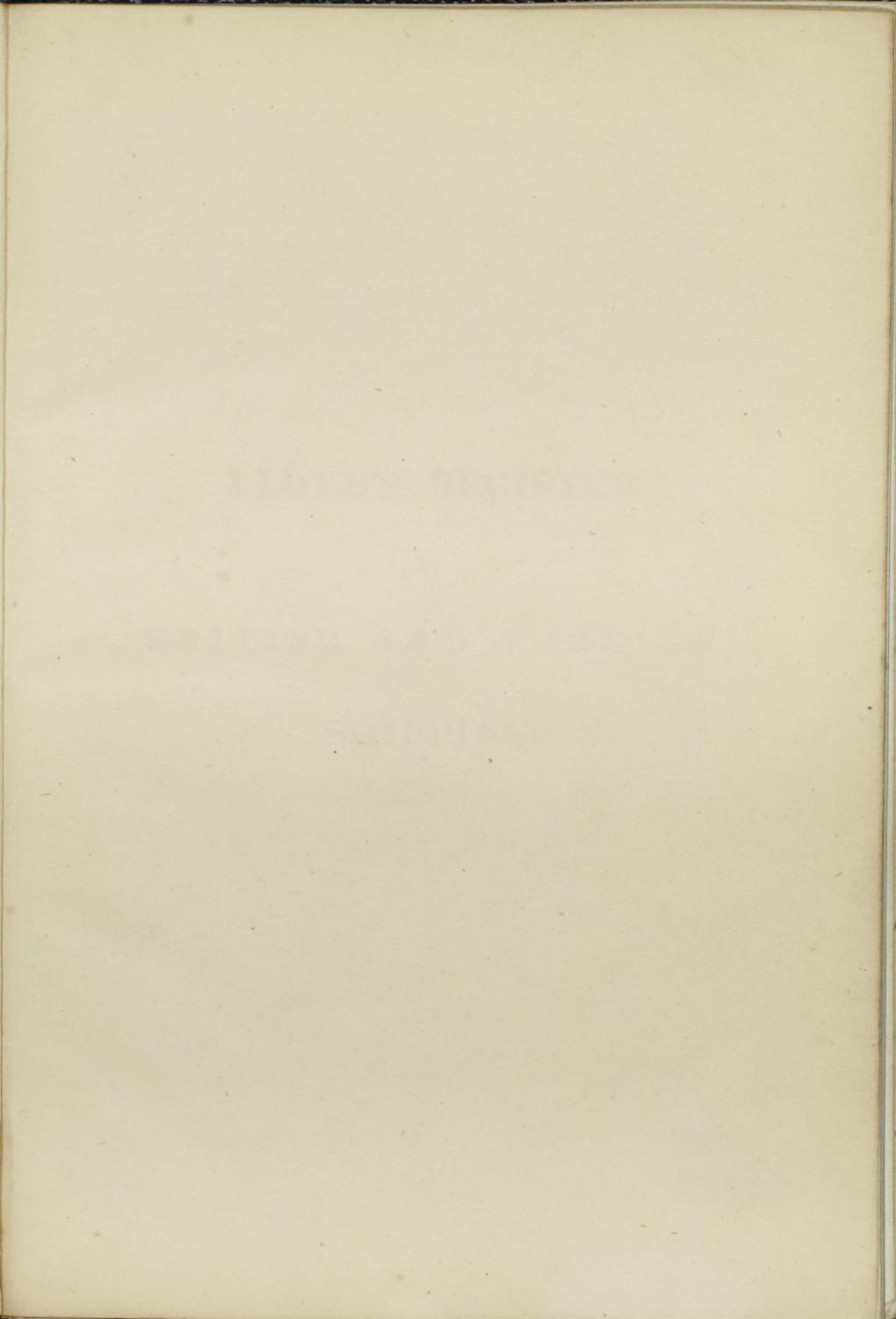


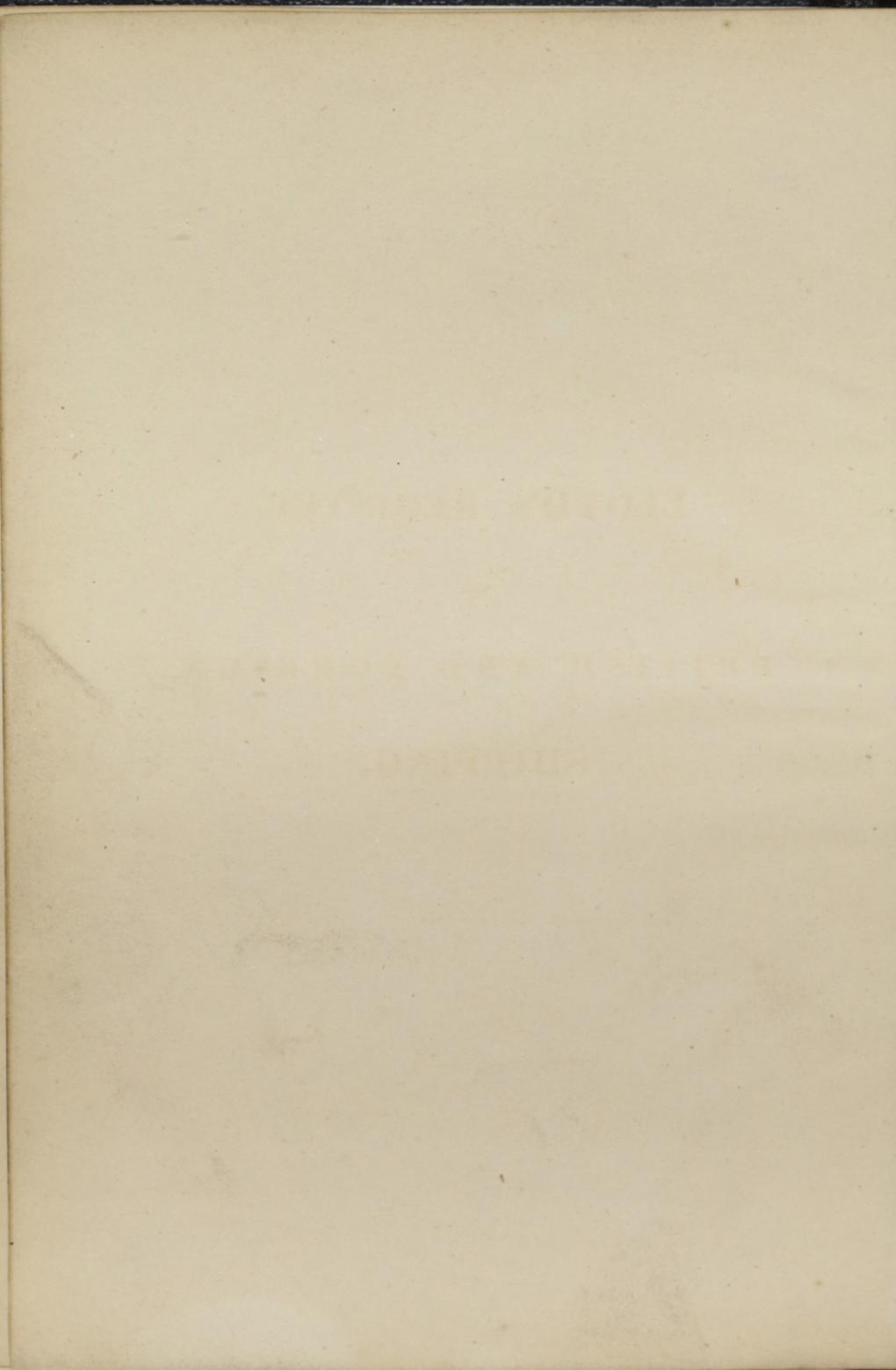












LLOYD'S REGISTER

OF

BRITISH AND FOREIGN

SHIPPING.

ELIAS RECHTS  
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do  
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SPRING.

LLOYD'S REGISTER  
OF  
BRITISH AND FOREIGN  
SHIPPING.

From 1st JULY, 1851, to the 30th JUNE, 1852.

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BRITISH AND FOREIGN  
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3. Each person subscribing the sum of Three Guineas per annum (or such other sum as the General Committee may fix), to be considered a Member of the Society, and entitled *for his own use* to one copy of the Register Book.
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5. The subscription of Marine Insurance Companies to be regulated by the Committee on special application, in each case, but not to be less than Ten Guineas per Annum.
6. The Register Book to be periodically posted throughout the year.
7. For the convenience of Subscribers not resident in London, a Supplement, containing the additions to, and corrections made in, the Register Book, to be printed fortnightly in such convenient form, as to admit of its transmission by Post, so that such parties may be furnished, from time to time, with the latest and most complete information.
8. The superintendence of the affairs of the Society to be under the direction of a Committee in London, of twenty-four members, consisting

of an equal proportion of Merchants, Ship-Owners, and Underwriters. The Chairman for managing the affairs of Lloyd's, and the Chairman of the General Ship-Owners' Society, and also the Chairman and Deputy Chairman of the Liverpool Committee, and the Chairman of the Rotation Committees for the time being, to be, *ex officio*, Members of the Committee.

9. Six of the members, namely, two of each of the constituent parts of the Committee, to go out annually by rotation, but to be eligible to be re-elected.

10. The vacancies so arising to be filled up by the election of two Underwriters and one Merchant by the Committee for managing the affairs of Lloyd's, and two Ship-Owners and one Merchant by the Committee of the General Ship-Owners' Society.

11. The Committee to appoint from their own body, annually, a Chairman and Deputy Chairman, and also a Chairman for a Sub-Committee of Classification.

12. The Committee to appoint a Sub-Committee of Classification, to be so regulated that each Member of the General Committee may, in rotation, take his turn of duty therein throughout the year.

13. The Secretary, Clerks, and Servants of the Society, and the Surveyors for London, Liverpool, and the other Outports, to be appointed by, and be under the direction of the General Committee.

14. Special meetings to be convened by order of the Chairman, or Deputy Chairman, or on the requisition of any three members.

15. All elections and appointments to be made by ballot.

16. No member of the Committee to be permitted to be present on the decision of the classification of any ship of which he is the owner, or wherein he is directly or indirectly interested.

17. The Committee to be empowered to make such By-laws for their own government and proceedings as they may deem requisite, not being inconsistent with the original Rules and Regulations under which the Society was established; but no new Rule or By-law to be introduced, nor any Rule or By-law altered, without special notice being given for that purpose at the meeting of the Committee next preceding that at which such Motion is intended to be made; such notice to be inserted in the summons convening the meeting. No new Rule, or alteration in any existing Rule, materially affecting the classification of ships, to take effect until the expiration of six months from the time it shall have been determined upon.

18. All reports of survey to be made in writing by the Surveyors according to the forms prescribed, and submitted for the consideration of the

General Committee, or of the Sub-Committee of Classification ; but the classing assigned by the latter to be subject to confirmation by the General Committee.

19. The reports of the Surveyors, and all documents and proceedings relating to the classification of ships, to be carefully preserved, and parties proving themselves to be interested therein, to have access to the same under the directions of the Chairman or Deputy Chairman.

20. Foreign ships, and ships built in the British possessions abroad (*See also Section 51*), to be surveyed on their arrival at a port in the United Kingdom ; but a due regard is to be had to the circumstance of their having been exempted from the supervision while building to which all British ships are subjected, and the class to be assigned to them is to be regulated according to their intrinsic quality, and from the best information the Committee can obtain.

21. In every case in which the class assigned to a ship may be proposed to be reduced, notice is to be given in writing to the Owner, Master, or Agent, with an intimation that if the reduction be objected to, the Committee will be ready to direct a special survey, on the Owner, Master, or Agent, agreeing to pay the expenses attending the same, provided on the said survey there shall appear sufficient ground for the proposed reduction.

22. When the Surveyors consider repairs to be requisite, they are respectfully to communicate the same in writing to the Owner, Master, or Agent, and if such repairs be not entered upon within a reasonable time, a corresponding report is to be made to the Committee for their decision thereon.

23. Parties considering the repairs suggested by the Surveyor to be unnecessary or unreasonable, may appeal to the Committee, who will direct a special survey to be held ; but should the opinion of the Surveyor be confirmed by the Committee, then the expense of such special survey is to be paid by the party appealing.

24. The Surveyors to the Society not to be permitted (without the especial sanction of the Committee), to receive any fee, gratuity, or reward whatsoever for their own use or benefit, for any service performed by them in their capacity of Surveyors to this Society, on pain of immediate dismissal.

25. The Surveyors will be directed to attend on special surveys of ships under damage, or repairs for Restoration, when required by merchants, Ship-Owners, or Underwriters ; the charge for which is to be regulated according to the nature and extent of the service performed. In all cases, the application for the assistance of the Surveyors must be made in writing addressed to the Secretary.

## FUNDS.

26. The Funds to be under the authority and control of the Committee, and a statement of the Receipts and Expenditure to be annually printed for the information of the subscribers.

27. The following Fees to be charged to the Owners of ships prior to their vessels being classed and registered in the book.

## I.

*For Entering and Classing Ships, and for Entering and Classing Ships surveyed for Continuation, or repaired for Restoration.*

For each Ship ...	...	under 100 Tons	...	£1 0 0
Ditto	... of 100 Tons and under 200	—	...	2 0 0
Ditto	... 200 —	300	...	3 0 0
Ditto	... 300 —	400	...	4 0 0
Ditto	... 400 and upwards ...	...	...	5 0 0

## II.

*For Registering Repairs; or change of Owners.*

For each Ship ...	...	under 150 Tons	...	£0 10 0
Ditto	... of 150 Tons and under 300	—	...	1 0 0
Ditto	... 300 —	500	...	2 0 0
Ditto	... 500 and upwards ...	...	...	3 0 0

## III.

*For Re-classing Ships (except when repaired) the Characters of which have been expunged.*

For each Ship ...	...	under 200 Tons	...	£0 10 0
Ditto		200 and above		1 0 0

*Special Surveys.*

28. For Special Surveys, and where the Surveyors to the society are required by the Owners to superintend the building of ships, or repairs for Restoration, or otherwise, a charge will be made according to the nature and extent of the service performed.

29. Certificates of Classification, of the Form No. 7, signed by the Chairman of the General Committee, or by the Chairman of the Sub-Committee of Classification, and countersigned by the Secretary, will be granted on application; the charge for which is to be as follows:—

For Ships under 200 Tons ... ... ... 5s. each.

Ditto of 200 — and above ... ... ... 10s. each.

30. Rules, each copy ... ... ... ... 2s. 6d.

## RULES FOR CLASSIFICATION.

31. The characters to be assigned to ships to be, as nearly as possible, a correct indication of their real and intrinsic qualities, and to be in all cases fixed (not by the Surveyors, but) by the Committee, after due consideration of the Reports of the Surveyors and such other documents as may be submitted to them.

32. In all cases in which the application of the rules must necessarily be regulated by the ship's admeasurement, the *least* tonnage (whether the result of the old or new method) is to be adopted.

### FIRST CLASS SHIPS.

#### *First Description,*

33. Will comprise all new ships and those which have not passed a prescribed age,\* provided they are kept in a state of complete repair and efficiency: and they will be designated by the letter A. The character A 1 will not, however, be granted to any vessel, unless satisfactory evidence of the date of build and place where built is produced.

34. The period to be assigned for their continuing on this Class to be determined with reference to the original construction and quality of the vessel, the materials employed, and the mode of building; and their continuance for the time so assigned to depend upon its being shown by occasional surveys (annually if practicable) that their efficiency is duly maintained. The characters of ships classed A for a term of years, will in future be struck out of the Register, unless such ships shall be brought under re-survey within a period in no case exceeding one-half of that originally assigned for their remaining in that class. After the expiration of the periods prescribed, ships will be permitted to continue on the List of Ships of the First Description, or may be restored thereto, for a further limited period, on complying with the conditions hereinafter shown in Sections 54, 55, and 57.

35. New ships are to be surveyed while building, by the Surveyors to this Society, in the following three stages of their progress, or they will be liable to lose one year of the period to which they might otherwise be entitled. (*See Section 53.*)

*First.*—When the frame is completed.

*Second.*—When the beams are put in, but before the decks are laid, and with at least two strakes of the plank of the ceiling between the lower deck and the bilge unwrought, to admit of an examination of the inner surface of the plank of the bottom.

*Third.*—When completed, and before the plank be painted or payed.

Ships for which a higher character than Ten Years' A 1 may be claimed must undergo a Survey by a Surveyor who is an exclusive Officer of the Society, twice, at least, while building; namely, at the first and at the second stages of their progress as above prescribed.

\* See the Tables of Timbering, &c. Nos. 1, 2, and 3.

36. A full statement, agreeably to Form No. 4, of the dimensions, scantlings, &c. of all new ships, verified by the builder, is to be transmitted by the Surveyor, and to be kept as a record in the office of the Society.

#### RULES TO BE OBSERVED IN BUILDING SHIPS.

##### TIMBERING.

37. The whole of the timber to be of good quality, of the descriptions hereinafter shown in a Tabular Form, No. 1, as applicable to the several terms of years for which ships so constructed may respectively be appointed to remain on the List of the First Description of the First Class: the stem, stern post, beams, transoms, apron, knightheads, hawse timbers, and kelson of ships claiming to stand *twelve years*, to be entirely free from all defects; the frame to be well squared from the first foothook heads upwards and free from sap, and likewise below, unless the timber be proportionably larger than the scantling hereafter described; every alternate set of timbers to be framed and bolted together to the gunwale. The butts of the timbers to be close, and not to be less in thickness than one-third of the entire moulding at that place, and to be well chocked with a butt at each end of the chock. In all cases in which the heads and heels of the timbers shall be *square*, in vessels intended for the twelve years grade, a dowel (to be in diameter from one-fourth to one-third of the moulding of the timber) must be introduced into the ends of such timbers in order to connect them together.\*

##### I.—THE SCANTLINGS TO BE NOT LESS THAN AS FOLLOWS:

			Tons.	Tons.
For Ships	...	...	150	500
ROOM AND SPACE TO BE	...	...	20 in.	30 in.
Floors sided, if square, and free from sap, to be at the kelson	8 in.		13 in.	
First foothooks sided, if square, at floor heads	...	...	7 in.	11 in.
Second foothooks sided, if square, at the heads	...	...	6½ in.	10 in.
Third foothooks sided, and top timbers, if square	...	...	6 in.	9 in.
The frame to be moulded at kelson	...	...	8 in.	13 in.
The frame to be moulded at floor heads	...	...	7 in.	11 in.
Top timbers to be moulded at their heads at the				
sheerstrake	...	...	4 in.	5 in.

38. The intermediate dimensions for the scantling of timbers between the floor heads and the gunwale to be regulated in proportion to the distance from the two points. Should the room and space be increased, the siding of

\* In the construction of poops and top-gallant forecastles the timbers must be of the same materials as are required by the Rules (Table No. 1) for the "Top-timbers" of the frames of ships, according to the several terms of years appointed for such ships to remain on the first description of the first class. The outside planking of the forecastle and the sheerstrakes, plankshears, shelf or clamp, and spirketting of poops and top gallant forecastles must be likewise of the materials required by the Rules (Table No. 2) for the "Topsides" of the said ships, *admitting also mahogany*. The remainder of the planking of the poops and top-gallant forecastles may be of fir of good quality. The beams of top-gallant forecastles and the mast beams, breast beam, and transom beam of poops, must be of the material required by the Rules (Table No. 1) for the beams of the said ships. The remainder of the beams and the water-ways of the poop may be of cedar, mahogany, Baltic fir, red pine, pitch pine, larch, backmatac, tamarac, juniper, or cowdie; and rock elm, for such beams only, in ships from the 7 A grade and upwards, and of yellow pine or American white spruce in all below that grade.

the timbers to be increased in proportion. Whenever ships are built with double floors, *thick strakes must be worked inside, to extend from the lower part of the short floor head chocks to the upper part of the long floor head chocks*, and be well bolted through and clenched. The plank outside from the wales to the lower floor heads, in vessels of 500 tons, must not be less than four inches thick, and of a proportionate thickness for vessels of other tonnage.

	<i>II.—Deck Beams.</i>			Tons.	Tons.
	For Ships	...	...	150	500
To be moulded in the middle	...	...	...	7 in.	9 in.
To be moulded at the ends	...	...	...	5 in.	7½ in.
And to be sided	...	...	...	7 in.	10 in.

39. Those at the after-end of the ship to be reduced in proportion to their length.

	<i>III.—Hold Beams.</i>			Tons.	Tons.
	For Ships	...	...	150	500
To be moulded in the middle	...	...	...	9 in.	13 in.
To be moulded at the ends	...	...	...	7 in.	10 in.
And to be sided	...	...	...	9 in.	13 in.

40. Those at the after-end of the ship to be reduced in proportion to their length.

41. The deck and hold beams to be sufficient in number,\* and securely fastened to the sides either with lodging knees of iron or wood, or with shelf pieces; or with a shelf piece and knees: or with some other security equal thereto, so as sufficiently to connect the ends of the beams to the sides of the ship: and, in addition, all ships of 150 tons and above to have vertical knees to the Deck beams; and those of 200 tons and above to have vertical knees to the Hold beams (fitted as standards or hanging knees, the latter being preferred), in number as shewn in the table, page 27. And ships of 400 tons shall likewise have to their Hold beams at least eight vertical knees, either as standards or hanging knees (the latter being preferred), and for every additional 100 tons burthen, they shall have one. Ships having a depth of hold, measured from the limber-strake to the under side of the lower deck beam, *above* thirteen feet but not exceeding fifteen feet, must be secured with iron riders, in number and description such as are prescribed by the Rules, section 62, or by orlop beams, sufficient in number and properly secured. *All*

\* As regards the spacing of Beams, it appears to the Committee that the following scale would in general meet the convenience of stowage in all trades, as well as secure the requisite transverse strength, so essential to be attended to according to the tonnage of the vessel.

The spaces between the beams (hatchways excepted) not to exceed the following distances:—

	Hold Beams.	Deck Beams.
Vessels under 200 Tons .. ..	8 feet .. ..	4 feet.
— 200 and under 400 Tons .. ..	8 feet and 4 feet alternately, .. ..	One over every Hold
— 400 Tons and above .. ..	4 feet 6 inches .. ..	Beam, and one in all double spaces.

*ships exceeding twenty-three feet in depth from the top of the limber-strake to the under side of the upper or main deck, will be required to have orlop beams; the number to be in no case less than one-half of the number of lower deck beams in the space between the fore-mast and the mizen-mast.* The application of this rule to colonial and fir built ships will not exempt them from the full operation of the Rules, section 62. Every ship exceeding 150 tons to have at least one crutch for the security of the heels of the after-timbers of the frame; one pair of pointers in addition to a knee at each end of the wing transom to connect the stern frame with the after-body of the ship; and a transom over the heels of the stern timbers properly kneed. The heels of the cant timbers forward and aft to be stepped into or on the deadwood, and bolted through.

IV.—Keel and Kelsons.

	For Ships	...	...	Tons.	Tons.
Keel, sided and moulded ...	...	...	...	150	500
Main Kelson to be sided ...	...	...	...	9 in.	13 in.
— moulded	...	...	...	10 in.	14 in.
The scarps of Kelson, where only one Kelson, to be ...				10 in.	14 in.
But where rider Kelsons are added, then they may be				5 ft.	7 ft.
				4½ ft.	6 ft.

42. Shifts of timber in ships of 200 tons and upwards, to be not less than one-seventh of the main breadth; and in ships under 200 tons, to be not less than one-sixth of the main breadth.

PLANK.

43. The outside planking to be of good quality, of the description prescribed in the Tabular Form, No. 2, hereinafter shown, and to be clear of all defects.

44. The inside planking to be of the description shown in the Tabular Form, No. 3, and free from all foxy, druxy, or decayed planks. The whole to be properly shifted and fastened.

45. No butts to be nearer than five feet to each other, unless there be a strake wrought between them, and then a distance of four feet will be allowed; and no butts to be on the same timber, unless there be three strakes between, as more particularly shown in the diagram annexed (*see Plate No. 3*); but vessels under 200 tons will be exempted from the full operation of this rule; and in ships of larger tonnage a literal compliance with it will be dispensed with in cases wherein it may be satisfactorily proved that the departure from the rule is only partial, being confined to the ends of the ship, or the thin planking of the topside, and does not injuriously affect the ship's general strength; but such relaxation will not be sanctioned unless an accurate description of the shifting of the plank be transmitted by the Surveyors, to enable the Committee to form a proper judgment on the case.

*Thickness of Plank to be not less than as under :*

	I.—Outside.				Tons.	Tons.
	For Ships ...				... 150	500.
Bilge to wales	...	...	...	...	... 2½ in.	4 in.
Short hoods	...	...	...	...	... 2½ in.	3 in.
Bilge plank	...	...	...	...	... 3 in.	4 in.
Bilge to keel	...	...	...	...	... 2½ in.	3 in.
Wales (average)	...	...	...	...	... 4 in.	5 in.
Topsides	...	...	...	...	... 2 in.	3 in.
Sheerstrake	...	...	...	...	... 3 in.	4 in.
Planksheer	...	...	...	...	... 2½ in.	4 in.
	II.—Inside.					
Ceiling below the hold beams	...	...	...	...	2 in.	3 in.
Bilge planks	...	...	...	...	3 in.	4 in.
Clamps and Limber strakes	...	...	...	...	2½ in.	4 in.
Upper-deck Clamps and Spirkettings	...	...	...	...	2½ in.	3 in.
'Twixt deck-ceiling	...	...	...	...	2 in.	2½ in.
	III.—Deck.					
Upper deck	...	...	...	...	2½ in.	3 in.
Waterways, if of hard wood	...	...	...	...	4 in.	5 in.
Do. if of Baltic Fir, Pitch Pine, or Red Pine	...	...	...	...	5 in.	8 in.

In regard to vessels built with *double floors*, see section 38, page 11.

## FASTENINGS.

46. The treenails to be of good quality, and of a description of wood EQUAL TO THE BEST MATERIAL through which they are to pass. They are to be circular, being either engine-turned, compressed, or planed. All planks above nine inches in width are to be treenailed double and single, except bolts intervene; and if less than that width, then to be treenailed single, and at least one-half of the treenails must go through the ceiling. All ships to be fastened with at least one bolt in every butt, and from the wales to the lower part of the bilges the bolt to be through and clenched. The bilges to be secured with bolts so placed that from the foremast to the mainmast in ships under 300 tons there shall be at least one bolt through and clenched in each first foothook; and that in ships of 300 tons and upwards there shall be at least two bolts through and clenched for each set of timbers in one or other of the thick bilge strakes. *All the bolts of the knees, breasthooks, crutches, riders, transoms, pointers, kelsons, shelf pieces and of all other material fastenings, are to be driven through and clenched on rings of the same metal as the bolts.* The up and down bolts in the knees to beams are not required to be through the deck, but whether clenched upon the beams, or upon the deck, they must be clenched on rings of the same metal as the bolts. The two bolts, the nearest to the crowns of the pintles and braces are also to be through and clenched, those through the braces to be in the

*main piece of post.* The limber strakes to be bolted down to the floors, and one bolt in every floor to be through and clenched. Ships otherwise entitled BY THEIR MATERIALS to stand higher than the TEN YEARS' grade, in which the whole of the outside fastenings above the floor heads, including those of the flat of the upper deck, shall consist of copper or mixed metal to the entire exclusion of iron bolts, nails, and treenails, and in which no iron bolts are used below the floor heads, shall be allowed an additional period of Two Years. And Ships otherwise entitled BY THEIR MATERIALS to stand higher than the TEN YEARS' grade, in which treenails may be used in fastening the plank, but in which all the bolts,\* and also nails of the flat of the upper deck, shall be of copper or mixed metal, to the entire exclusion of iron, shall be allowed an additional period of One Year. In all such cases of substitution, the number of bolts must be the same as is already prescribed as above for treenails; the proportion of through and short bolts must be one of the former and two of the latter alternately,† so that the through bolts may be placed in succession on each edge of the plank, and all the through bolts must be of malleable metal, and clenched on rings (of the same metal) inside. The sizes of the copper or mixed metal bolts must be as under, *viz.*

For vessels of 150 tons and under 200 tons ...	...	...	...	5 in.
200 ditto 500	...	...	...	3 in.
500 and above ...	...	...	...	7 in.

and the lengths of the short bolts not less than as follows, *viz.*—

When used in plank of $2\frac{1}{2}$ inches, to be 7 inches long			
—	3 "	8 "	
—	4 "	10 "	
—	5 "	12 "	

and so on in proportion for plank of other thicknesses. The sizes of the bolts required in the several parts hereinafter described, to be not less than as against the same expressed, *viz.*—

		Tons.	Tons.
For Ships	...	150	500
Heel-knee, and dead wood abaft	...	1 in.	$1\frac{1}{4}$ in.
Scarp of the keel	... (In No. 6)	$\frac{3}{4}$ in. (Bolts of)	1 in.
Kelson bolts, one through each floor	...	$\frac{5}{8}$ in.	$1\frac{1}{8}$ in.
Bolts through the bilge and limber strakes	...	$\frac{5}{8}$ in.	$\frac{3}{8}$ in.
Butt bolts	...	$\frac{5}{8}$ in.	$\frac{3}{4}$ in.
Hold beam bolts	...	$\frac{7}{8}$ in.	$1\frac{1}{8}$ in.
Deck beam bolts	...	$\frac{7}{8}$ in.	$\frac{5}{8}$ in.
Hooks forward at throat	...	$\frac{7}{8}$ in.	$1\frac{1}{8}$ in.
Hooks forward at arms	...	$\frac{5}{8}$ in.	1 in.
Transoms	...	$\frac{7}{8}$ in.	$1\frac{1}{8}$ in.
The lower pintle of the rudder	...	$2\frac{1}{2}$ in.	$3\frac{1}{2}$ in.

\* It is not intended that this rule should apply to the iron bolts or fastenings which are incidental to the rigging.

† Whenever metal fastenings are used in lieu of treenails, this proportion must be observed.

The sizes of bolts for vessels of other tonnage will be found more fully described, page 27, and also *Plate No. 4.*

47. In every case where the butt and bilge bolts are not through and clenched, One Year will be deducted from the period which would otherwise be assigned in the classification of the vessel.

48. The scantlings and dimensions for all intermediate-sized vessels to be proportionately regulated, agreeably to a scale adopted by the Society, a copy of which is in the hands of each of the Surveyors. See *Plates Nos. 1 & 2.*

49. Ships surveyed while building, in which *all the materials required for a Twelve Years' Ship shall have been used*, and most of the other requisites for that class fulfilled, but which, from partial deficiencies, may not appear to be in all respects entitled to the highest class, although superior to the description of a Ten Years' ship, may be marked in the Book thus, 11 A ; thereby denoting that they are to remain in the First Description of the First Class *Eleven Years*, provided they be kept in a state of efficient repair.

50. Ships surveyed while building, in which the scantling and shifts of the timbers, the thickness and shifts of the planks, and size of fastenings may be the same as are required by the preceding rules, and in which the description of materials prescribed in the annexed Tables shall also have been used, but in which the *alternate* sets of timbers shall not have been framed, nor the chocks wrought with a butt at each end, nor the frame so well squared as is required for Twelve Years' ships, but which shall be *in other respects* equal thereto, shall be marked "10 A;" thereby denoting that they are to remain on the List of Ships of the First Description of the First Class *Ten Years*, provided they be kept in a state of efficient repair.

51. In all other cases, ships surveyed while building, and constructed of the materials of good quality, hereinafter shown in the Tables Nos. 1, 2, and 3, will be classed for the several terms of years respectively appointed for their remaining on the List of Ships of the First Description of the First Class.—All ships, *not built under Survey*, whether in the United Kingdom or abroad for which a class may be claimed, must be placed in dry dock or laid on the ways in order that their bottoms may be seen and properly examined; they will also be required to have *their timbers completely exposed for examination, by a listing or plank being taken out* (if not originally left open) all fore and aft at the foothook heads, and another between decks; *and a few treenails must likewise be driven out*, so that the Surveyors, from actual inspection, may be satisfied whether or not they are of the quality and make prescribed by the Rules; and the material

of the frame and the quality of the treenails being thus ascertained, the same shall be reported to the Committee, and a class assigned accordingly.

52. Ships built in the United Kingdom under a roof, *which shall project at each end beyond the length, and on each side beyond the breadth, a quantity equal to half the breadth of the vessel*, shall have one year added to the period prescribed for their continuing in the List of Ships of the First description of the First Class, provided they shall have occupied a period of not less than twelve months in their construction, *and not less than nine months (as part thereof) after the Frames shall have been completed.*

53. Ships built in the United Kingdom since the year 1834, and *not surveyed while building* by the Surveyors to this Society, or where the owners or builders may have refused to permit them to survey and examine the same at the several periods prescribed by the Rules, will be subjected to the minutest possible examination previously to assigning the class in which they may be placed according to the regulations; but in all such cases One Year will be deducted from the period which would otherwise be allowed, in consequence of their not having been submitted to such survey during their construction. In no case, however, will a higher grade than 10 A be assigned to ships built in the United Kingdom, which shall not have been surveyed while building.

#### CONTINUATION OF SHIPS IN THE FIRST DESCRIPTION OF THE FIRST CLASS.

54. If, on the termination of the period of original designation, or if at any subsequent period within the limitation hereafter mentioned, a Ship-Owner should wish to have his ship remain, or be replaced on the letter A (*vide section 86*), he is to send a written notice thereof to the Secretary, and the Committee shall then direct a Special Survey as follows to be held, consisting of not less than *two* competent persons to be appointed by the Committee, one of whom shall be a Surveyor the exclusive servant of the Society, namely,

##### SURVEY.

For the purpose of facilitating such survey, the ship shall be either placed in dry dock or laid on the ways, *and the upper works from the lower part of the wales to the upper part of the sheerstrakes, shall be scraped so as to expose the surface of the plank to view.* The attention of the Surveyors shall then be particularly directed to the state of the *upper or main deck* and coming, the upper and lower deck bolts, and the outside planks through which they pass, the *planksheers*, waterways, and beams, so far as they can be examined; the hawse timbers, knightheads, breasthooks, and transoms; the floors and kelsons; the planking outside, *and the treenails passing through* from the light water mark upwards; the ceiling inside, and the frame and inner surface of

the outside planking where it may be seen; and the sheer and general form of the ship; *and should any suspicious treenails or bolts appear, the same are to be driven out for inspection.* The Surveyors on these points shall transmit to the Committee a detailed report, accompanied by such observations as may occur to them, either from inspection of the ship, or from information of the repairs she may have received. If from the report of such special survey the ship shall appear to be in a sound and efficient state, and to have preserved her original form unaltered, the Committee shall continue such ship on the letter A for such further period as they may think fit, not exceeding, however, one-third of the number of years which had been originally assigned. Ships so continued shall be distinguished in the Register Book by the number of years for which the classing is extended, being inserted separately under the number assigned on the original classing, thereby denoting that the ship has been found on survey in such good and efficient order as to entitle her to be continued              years longer on the List of ships of the First Description of the First Class. Ships built in the Colonies, however, which shall have been classed A for four years, will, on the termination of that period, be allowed a continuation of Character for *Two Years*, provided that, in addition to the above requisitions, and those prescribed by section 63, the Owners shall agree to a *stake in the Topsides, fore and aft*, being also removed, and the ships, specially surveyed in that state, shall be found to be in a sound and efficient condition. The period assigned for continuation will, upon all occasions, commence from the time the ship may have gone off the letter A, without regard to the date when the survey for this purpose may have been held.

In cases of the repair of ships for continuation of character under the Rules, section 54, (*but in no other*) materials of an inferior description (but not below those prescribed for the six years' grade) may be permitted to be used in those parts which must of necessity, under the operation of the Rules, section 56, be *entirely removed* on a repair for restoration; subject, however, to the ship-owner, in every instance, making a special application to the Committee for their previous sanction.

#### RESTORATION OF SHIPS TO THE FIRST DESCRIPTION OF THE FIRST CLASS.

##### FIRST RULE.

55. If, at any time before the expiration of two-thirds of the number of years *beyond* the period for which ships may have been originally assigned to remain in the First Description of the First Class, an owner be desirous to have his ship restored to the List of Ships of that description, such restoration (on his consenting to the special survey hereinafter described, to be held by two Surveyors, and performing the repairs found requisite) will be granted for a period not exceeding two-thirds of the time originally assigned for her remaining as a ship of the First Description of the First Class, the same to be calculated from the date of such repairs.

*Requisites for Restoration.*

56. All the bolts in the range of each deck to be driven out, and the planks taken out; the upper deck waterways, and plankshears and spirketting, and the strake next the waterways on the lower deck in the midships, to be taken out; the sheathing to be entirely stripped off the bottom; *all the outside planking from the light water-mark upwards, to be scraped bright*; a strake in the upper course of the bottom, between the wales and the light water-mark fore and aft, and a plank in the ceiling at the floor heads on each side, to be taken out, the limbers to be clear, and the hooks forward to be exposed; and in that state the ship to be submitted to a special survey and examination, at which the attention of the Surveyors appointed by this Society is to be particularly directed to the state of the decks, the remaining plank of the topsides, the wales, upper courses, and treenails, and other fastenings; also to the state of the frame, hawse timbers, and knighthheads, kelson, floors, foothooks, ceiling, and breasthooks, the rudder in all its parts and hangings; and if, after such examination, the Owner should consent to take out all planks, timbers, beams, knees, waterways, fastenings, and other parts that may be found defective, or objected to, and replace them with materials of the same species, or of equal quality with those of which the ship was originally constructed, such ships to be entitled to restoration to the First Description of the First Class, for a period proportionate to their real condition and the extent of the repairs performed; or if timber of an inferior description, or second-hand English or African Oak or Teak be used, then for a period not exceeding that for which such materials would have entitled a new ship to stand A 1 according to the tables, subject in either case to the ship being at all times thereafter kept in a state of efficient repair.

## SECOND RULE.

57. If, *at any age* of a vessel, an Owner be desirous to have his ship restored to the First Description of the First Class, such restoration (on his consenting to the special survey hereinafter described, to be held by two Surveyors, and performing the repairs thereby found requisite) will be granted for so long a period as may be deemed expedient by the Committee, not exceeding, in any case, the term of eight years.

*Requisites for Restoration.*

58. The whole of the outside plank of the vessel to be taken off as low as the second foothook heads, and the remainder of the planking, either outside or inside, together with all the decks, to be removed, *so as to expose the timbers of the frame entirely to view*, and in that state the ship to be submitted to a special survey and examination, by the Surveyors appointed by this Society; and if, after such examination all timbers, beams, knees, kel-soms, transoms, breasthooks, remaining plank, inside or outside, or other parts found to be defective, be replaced with materials of the same species, or of equal quality with those of which the ship was originally constructed, and all the treenails driven out and renewed, such ship may be restored to the First Description of the First Class. But if timber of an inferior description, or second-hand English or African Oak or Teak be used, then

for a period not exceeding that for which such materials would have entitled a new ship to stand A 1 according to the tables, subject, in either case, to the ship being at all times thereafter kept in a state of efficient repair.

59. Ships which have been *restored* to the Class A shall be entitled to an extension of the time, subject to the same conditions of survey and examination as are prescribed for ships proposed to be continued in the First Description of the First Class, at the expiration of the period first assigned to them; but in like manner, the term of such extended continuance shall be limited to a period not exceeding one-third of the number of years for which the ships may respectively have been *restored*, without any reference whatever to the period originally assigned to them.

## FIRST CLASS SHIPS.

### *Second Description,*

60. Will comprise all ships which have passed the prescribed age, but have not undergone the repairs which would have entitled them to be continued in or restored to the First Description, or having been continued or restored, and the additional period thus assigned having expired, shall appear on survey to be still in a condition for the safe conveyance of dry and perishable cargoes, and they will be designated by the diphthong character,  $\mathcal{E}$ . Such ships, however, of this class as shall be found on survey to be of superior description, being fit for the safe conveyance of dry and perishable goods to and from all parts of the world, shall be distinguished by inserting their characters in Red with an asterisk thus prefixed, \* $\mathcal{E}$ .—But in all cases in which the owner may claim this distinction, the ship must undergo a special survey by two surveyors, to be appointed in every instance by the Committee, and be subject in other respects to a compliance with the undermentioned requisitions of

### SURVEY.

The ship to be either placed in dry dock or laid on the ways, and the upper works from the lower part of the wales to the upper part of the sheerstrakes scraped so as to expose the surface of the plank to view. The attention of the surveyors shall then be particularly directed to the state of the upper or main deck and coming, the upper and lower deck bolts, and the outside planks through which they pass, the plankshears, waterways, and beams, so far as they can be examined; the hawse timbers, knightheads, breasthooks, and transoms; the floors and kelsons; the planking outside, and the treenails passing through from the light water mark upwards; the ceiling inside, and the frame and inner surface of the outside planking where it may be seen; and the sheer and general form of the ship; and should any suspicious treenails or bolts appear, the same are to be driven out for inspection.

And to entitle them to continue in this class, such vessels will be re-

quired, in addition to the usual annual survey, to undergo a special re-survey, as prescribed above, within a period (from the date of the last Special Survey) not exceeding ~~two thirds~~<sup>one half</sup> of the several terms of years originally assigned to them as ships of the First description of the First Class; or earlier, if in the judgment of the Surveyors, upon a careful examination of the ship, the same shall appear to them to be necessary. With respect to the materials to be used in the repair of vessels, the Owners of which may apply for a Special Survey for the Asterisk, not any will be permitted of a description inferior to the materials contained in the Tables for Vessels of the Six Years' grade, or to those prescribed by the Tables for New Ships of higher classes, for periods equal to two-thirds of the several terms of years of original designation of the ships undergoing repair, as the case may be.—Those ships, however, the original construction of which may not have entitled them to be classed in the First Class A for a longer period than Five Years, will not be allowed the distinction of the asterisk.

61. For the purpose of continuing a ship on the List of Ships of the Second Description of the First Class, a careful survey will be required to be made annually, or on the return of the ship from every foreign voyage, by one of the Surveyors to this Society, who is to state distinctly and separately the actual condition of the upper deck fastenings, waterways, spirketting, planksheers, topsides, upper deck with its appendages, lower deck fastenings, wales, counter, plank, and treenails outside to the water's edge, rudder, windlass, and capstan, beams, breasthooks, transoms, and timbers; but if not surveyed within twelve months after entering the Second Description of the First Class, such ship having been during that time in some port in the United Kingdom, the character will be omitted until such survey be held; or, as the case may be, she will be allowed to pass into the class E. Whenever it shall appear to the Surveyors that a vessel classed *Æ* with the asterisk shall no longer be in a condition to deserve that distinction, notice of the proposal to reduce her shall be given in writing to the Owner, Master, or Agent, in the same manner as is prescribed by the rules, section 21, page 7.

#### BRITISH NORTH-AMERICAN BUILT SHIPS, AND FIR SHIPS.

62. Ships built in the British North-American Colonies, and all ships, wherever built, the frames of which are composed of *Fir*, of 300 tons and above, shall, in order to entitle them to be classed in the Register Book of the Society, be secured in their bilges by the application of iron riders to cover the joints of the floor and foothook heads, to extend from the height of the hold beams to the floors so as to receive not less than two bolts in a substantial part of the floors; the number of iron riders to be not less than one on every fourth floor on each side from two feet abaft the mainmast to two feet abaft the foremast, the size thereof to be not less than  $3\frac{1}{4}$  inches by  $1\frac{1}{4}$  inches at the joints of the timbers for ships of from 300 to 400 tons, and to be increased *one quarter of an inch each way*, for every one hundred tons of increased size. That all such ships shall also be secured by iron hanging knees to the hold beams, one knee to every alternate hold beam, provided

the distance of the said beams from each other does not exceed 4 feet 6 inches, and the tonnage be less than 400 tons; but if the distance exceeds 4 feet 6 inches, or the ship is 400 tons and above, then one to every hold beam. The knees to be connected with the riders or not, at the option or convenience of the owners; but if not so connected, the side arms are to be long enough to receive at least four bolts; the whole to be securely bolted with bolts of sufficient size. In cases of refusal, the words "not fastened as per rule, section 62," will be inserted against the vessels' names. All ships built in the Colonies will be considered as "iron fastened" in their centre lines, unless it shall be satisfactorily shewn to the contrary, either by the exposure of some of the bolts, or by a certificate to be produced from the builders.

63. All British North-American built ships, which have gone, or may go off the List of Ships of the First Description of the First Class, or which may be of an age exceeding the period for which they might have had claims to be put upon that class (whether classed or not), shall, as from time to time they come under examination, be subjected to a careful survey, to be made by one of the Surveyors to this Society;—and no further character shall be assigned them unless a survey shall be held as follows; and planking, either inside or outside, at the discretion of the Surveyors, in quantity equal to *one entire stave* fore and aft on both sides, shall be removed; to be taken out in mid-ships immediately above the turn of the Bilge, and *at such height* forward and aft as may, in their judgment, best expose the timbers of the frame to view; that a special report of the state of these timbers, and of the general state and condition of the upper deck fastenings, waterways, spirketting, plankshears, topsides, upper deck with its appendages, lower deck fastenings, wales, counter, plank and treenails outside to the water's edge, rudder, windlass, and capstan, beams and breasthooks, shall be transmitted by the Surveyors to the Committee; and on the receipt of such report the classing shall take place. If the diphthong character be then assigned, it shall be continued (subject to an annual survey) for a period not exceeding the number of years originally assigned for the ship's remaining in the First Description of the First Class; at the expiration of which the character will be discontinued, unless a similar survey and examination of the frame be again submitted to.

#### SECOND CLASS SHIPS,

64. Will comprise all ships which shall be found on survey unfit for carrying *dry* cargoes, but perfectly fit for the conveyance, *on any voyage*, of cargoes not in their nature subject to sea-damage; and they will be designated by the letter E.

65. Subject to occasional inspection, at least once in every two years, ships will continue in this class so long as their condition shall, in the opinion of the Committee, entitle them thereto.

#### THIRD CLASS SHIPS

66. Will comprise ships which shall be found on survey fit for the conveyance, *on short voyages* (not out of Europe), of cargoes in their nature not subject to sea-damage; and they will be designated by the letter I.

67. The bottom of every ship is to be CAULKED once in every five years, unless wood-sheathed and felted, and then once in every seven years, except in the case of *Teak-built ships*, upon which a special survey may have been requested, and the Surveyors having ascertained, by the removal of a strake of sheathing fore and aft under the wales, and a strake at the first foothook heads, and by causing listings to be cut out at the wood's ends, that such caulking is not required, the same may then be dispensed with. If any ship shall be stripped within the periods above mentioned, her bottom is to be caulked, *if necessary*.

68. In all cases in which ships may be doubled, doubling of not less than the thicknesses hereinafter mentioned will be required, the same to be properly wrought and fastened as follows: in every instance the doubling is to be at least single fastened either with treenails or with bolts, and a through bolt in every butt. If treenails be used, every treenail must, if practicable, be a through fastening; and if bolts be used, then one-sixth of them from the lower part of the bilge upwards must be through and clenched on the ceiling in addition to the butt bolts.

The throat bolts of iron knees, and the bolts of iron hooks, crutches, and pointers, must be renewed through the doubling.

The thickness of the doubling for the wales and bottom, on ships

Under 400 tons to be not less than	... 2 inches
of 400 " and under 600 tons	... 2½ "
of 600 " and above	... 3 "

On the topsides of ships not exceeding 300 tons, the thickness may be  $1\frac{1}{2}$  inches.

No ship hereafter doubled, shall be entitled to the asterisk or any higher class, unless it shall be ascertained at the time of doubling that the frame is capable of securely retaining the fastenings.

#### Iron-fastened Ships.

69. All ships although iron-fastened (except as hereinafter mentioned) shall be classed in the same manner as copper-fastened ships, so long as they remain unsheathed with copper, provided they are, in all other respects, constructed in accordance with the Rules; but when sheathed with copper over the iron fastenings, the words "Coppered over Iron Bolts" shall be added to the character in the Register Book, and continued until the ship be thoroughly copper-fastened.

70. Ships built in India, although fastened with iron, shall be permitted to be copper-sheathed without any mark being placed in the Book, provided the bottom be felted or chunamed, and wood-sheathed, and subject to a careful examination of the iron fastenings on every occasion on which the sheathing is stripped off, for which purpose some of the bolts and nails are to be taken out of the lower part of the bottom, and to be seen by the Surveyor; but no such ship shall be permitted to continue either on the A or on the AE class for a longer period than one-half the number of years beyond the term originally assigned for her remaining on the First Description of the First Class, unless the bottom shall have been doubled, or the whole of the iron fastenings taken out or properly secured, and the bottom refastened with bolts, or treenails, or both, including the middle line and breasthook and crutch bolts.

**ANCHORS, CABLES, AND STORES.**

71. All vessels are required to have their masts, spars, and standing rigging in good order, and sails in sufficient number and good condition, and every ship is to be supplied with a good hempen stream-cable or tow-line of sufficient size and length, and with at least one good warp; and all vessels are to be provided with anchors of proper weight, and cables of approved quality, properly tested, in number and length according to the undermentioned scale :—

*Anchors.*

72. All vessels under 200 tons to have at least two bower anchors, and all vessels of 200 tons and above, to be provided with at least three bower anchors.

*Cables.*

*Tons. Fathoms.*

73. All vessels ..... under 150 to have at least 150 if chain.

— of 150 and under 250 .....	180	do.
— 250 .....	350	do.
— 350 .....	500	do.
— 500 .....	700	do.
— 700 and upwards .....	300	do.

The Surveyors shall require with all new chains supplied to ships, the production of a certificate of their having been duly tested, and of the strain applied to them; and that each length (generally consisting of about fifteen fathoms), should be marked with the amount of strain applied to them.

74. In all cases where hempen cables are used, one-sixth more in length will be required.

*Boats.*

75. All vessels under 150 tons to be provided with one good boat; and every vessel of 150 tons and above to be provided with at least two good boats.

76. The efficient state and condition of ships' anchors, cables, and stores, will be designated by the figure 1; and where the same are found insufficient in quantity, or defective in quality, by the figure 2.

**SHIPS NAVIGATED BY STEAM.**

77. All sea-going vessels navigated by Steam shall be required to be surveyed twice in each year, when a character will be assigned to them according to the report of survey as regards the classification of the hull and materials of the vessel.

78. That with respect to the boilers and machinery, the owners are required to produce to the Surveyors to this Society at the above-directed surveys, a certificate from some competent Master Engineer, describing their state and condition at those periods; and to which certificate it is desirable there should be added a description of the particulars of the same, as far as may be practicable, in the manner and form annexed, No. 8; to be appended to the

report of survey, and delivered to the Committee, who will thereupon insert in the Register Book the letters "M.C." denoting that the boilers and machinery have been inspected and certified to be in good order and safe working condition ; but if no certificate of their condition be furnished by the Owner or Master, then no character can be assigned for the machinery.

79. *Hull* :—The Surveyors to this Society are directed to examine and report the scantling of timbers, plank, and fastenings, and to state where built, and by whom, in the same manner as directed for sailing vessels.

The following relaxation from the Rules applicable to sailing vessels will be allowed in favour of steamers.

Fir (to be either Pitch Pine, Baltic Red Fir, or American Red Pine), Larch, Hackmatack, or Juniper, may be used for upper deck beams, to an extent not exceeding *one-half* the number of beams required according to the vessel's tonnage.

The same materials may be used in the outside planking from the first foot-hook heads upwards, excepting for the wales, sheerstrakes, and plankshears.

The same materials may be likewise used in the inside planking, excepting for the bilge planks, shelf-pieces and stringers, and clamps.

Steam-vessels built in all other respects in conformity with the annexed tables shall be classed for the terms of years therein respectively prescribed, subject to the following conditions :—

That the Rule requiring a survey 'twice a year' be rigidly enforced, and that whenever the boilers are taken out, the vessel shall be subjected to a particular and special survey, in order to ascertain her general condition, and particularly the state of the Fir, or other materials herein allowed to be used.

That unless such surveys be held, the characters which may have been assigned to steam-vessels shall be struck out annually on reprinting the Register Book.

80. *Scantlings* :—The scantlings for a steam-vessel under 300 tons register including the engine room, are to be deemed sufficient, if equal to those required by the scale prescribed in the Rules of this Society for a sailing vessel of *two-thirds* of the total tonnage of such steam-vessel.

81. But for a steam-vessel above 300 tons register, including the engine room, the scantlings are to be equal to those required by the scale for a sailing vessel of *three-fourths* of the total tonnage of such steam-vessel.

82. *Floors* :—Where the vessel is not *filled in solid to the floor-heads in the engine room*, an exception will be specially made against any reduction of the scantling of the *floors*, which in such cases will not be permitted to be

upon the reduced scale of two-thirds or three-fourths of the dimensions for the *scantling* of sailing vessels, as before stated; but the *floors* will then be required to be equal to the dimensions set forth in the Rules for ships of the tonnage of the steam-vessel, including the engine room.

Vessels fitted with auxiliary steam power are considered to be sailing vessels (not steamers), and will not be allowed any exception as to their scantlings.

83. The Surveyors are required to report the number, size, length, fastenings, and mode of arrangement of the engine and boiler *sleepers*, and the description of timber of which they are composed, and whether diagonally trussed with wood or iron, and to what extent; the length, size, and fastenings of shelf-pieces and paddle-beams; and whether the vessel be constructed with sponcings, and how they are formed; and to give the length and shifting of the plank outside and inside.

84. *Materials and Stores*:—The Surveyors are to examine and report the number and description of the masts, sails, anchors, cables, hawsers, warps, and boats, as directed to be done for sailing vessels; but the anchors and cables will not be required to exceed in weight and length those of a sailing vessel of two-thirds of the total tonnage of the steam-vessel.

85. The Surveyors are to be particular in examining and reporting the condition of the boats of all vessels employed in carrying passengers.

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86. At the termination of the several periods assigned to ships for remaining on the First Description of the First Class, they will be reduced to the Second Description designated by the diphthong *Æ*; but if during the *last year* of the period assigned to them as ships A 1, the Owners of a ship shall, in consequence of her being about to proceed on a distant foreign voyage, apply to have her surveyed for continuation on the letter A, or for the Asterisk, a special survey shall be held conformably to the Rules, sections 54 or 60, as the case may be: and if from the report of such special survey, the ship shall appear to be in all respects in a sound and efficient state, such as is required by those Rules, the Committee shall, from the period at which the ship's character would terminate, continue such ship on the letter A, or assign to her the character \**Æ* (in red) in accordance with the Rules referred to.

~~not an iron ship~~ ~~to~~ **SHIPS BUILT OF IRON.** ~~since however not now~~

The following Resolution for the classification of vessels built of Iron (until more defined Rules could be framed) was passed on the 4th January, 1844:—

"That the character of A 1 will in future be granted to such ships as shall be constructed of Iron under the survey of the Surveyors to this Society, and be reported (Form No. 5), on their completion, to have been built of good and substantial materials, and with good workmanship."

"That Iron ships, already built, upon being subject to a careful and minute survey, and being reported to be in a high state of repair and efficiency, will also be classed as above; but if not so reported, they will be allowed such other character as, on a due consideration of their respective claims, they may be found to deserve."

"That in every instance in which a character may be assigned to ships built of Iron, it must be understood that such ships must be subjected to a careful ANNUAL SURVEY, and that the continuance or otherwise of the character assigned will depend entirely upon the result of this survey.—And that vessels *not surveyed annually* will lose their character."

The Rules having been amended or altered in sections 33, 35, 37, 38, 41, 46, 52, 54, and 60, in conformity with the several Resolutions previously passed, the attention of Ship-owners and Ship-builders is respectfully invited to the consideration of these Rules, as well as the tables for the timbering, &c. of ships, but especially to the limited use of Sabicu and Mahogany.

I request also the attention of Ship-owners to the circumstance of the "Liverpool Appendix" having been discontinued last year, and to the conditions upon which the ships, which were contained therein, would in future be classed. These will be found in the advertisement then issued, a copy of which is included in the Appendix to this year's Register.

I beg also to add, that in pursuance of a Resolution passed by the Committee on the 19th September, 1850, the date of build of new ships launched, in future, during the months of November and December, will be that of the year *succeeding*, provided the ships shall not have been previously registered or sent to sea.

By Order of the Committee,

CHARLES GRAHAM,

*Secretary.*

No. 2, White Lion Court, Cornhill,  
London, 1st July, 1851.



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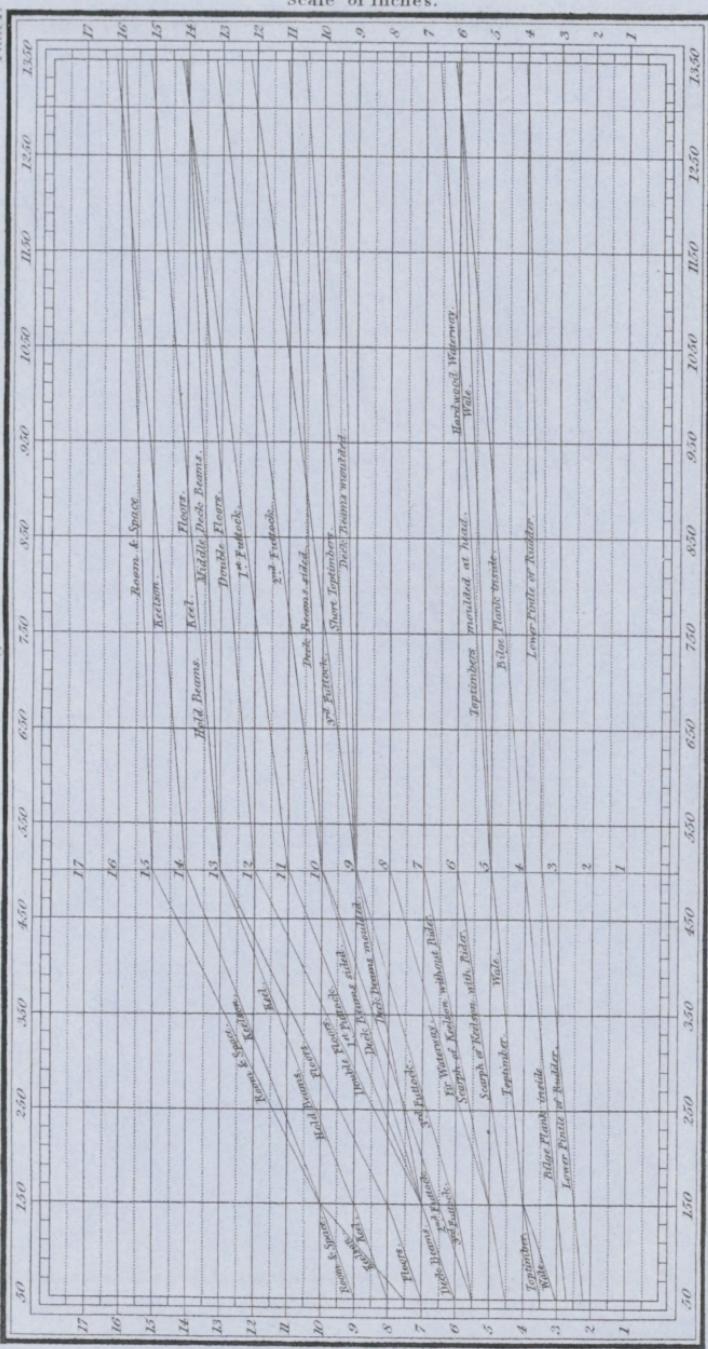
Secretary.

No. 2, White Lion Court, Cornhill,  
London, 1st July, 1851.

*SCALE for ascertaining the proportionate dimensions of TIMBER, PLANK &c.*

Tomañoé.

Plate I.



N.B. Set off the Number of Indeks given in the Rules for Ships of 50 Tons, 500 Tons, 5000 Tons, & 13000 Tons, on their respective perpendiculars — then a line drawn through those points will show on the intermediate perpendiculars the proportionate dimensions of the corresponding Timbers Planed to Tonnage.





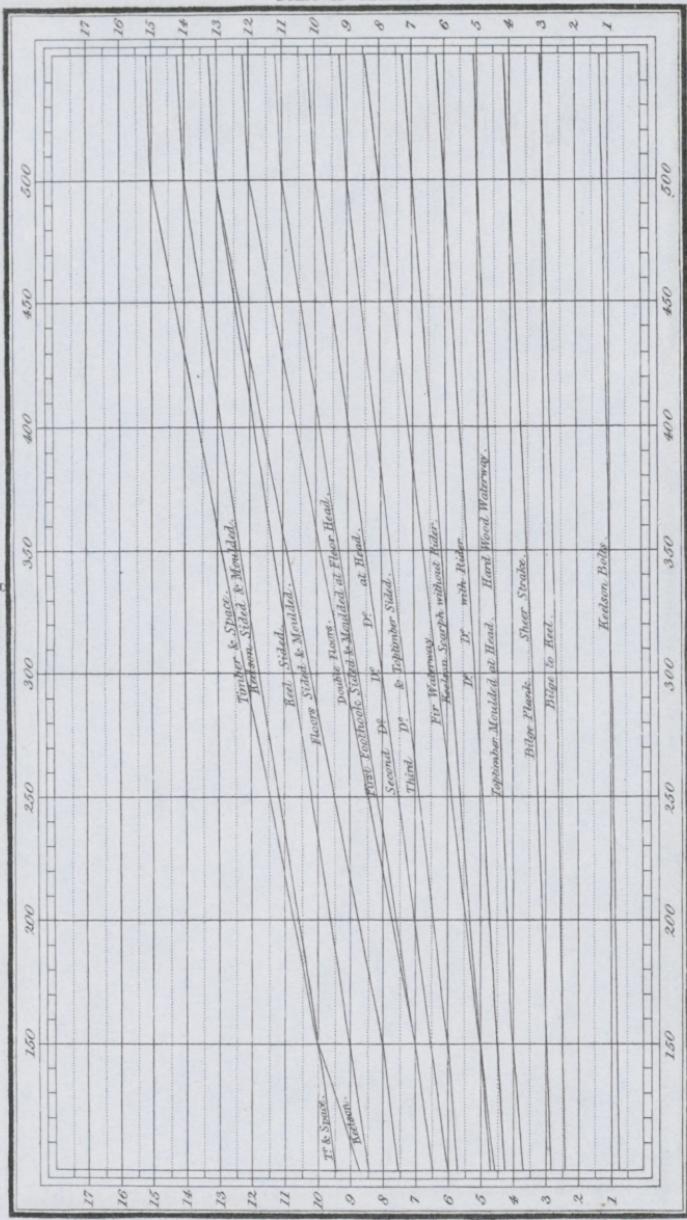
TABLE VI. THE MEASUREMENTS OF THE VARIOUS PARTS OF THE  
LARVAE, MADE IN

Part	Length	Width	Thickness	Length		Width		Thickness	
				Frontal	Posterior	Maxillary	Posterior	Maxillary	Posterior
Head	1.00	0.30	0.10	0.30	0.70	0.20	0.10	0.10	0.05
Thorax	1.00	0.30	0.10	0.30	0.70	0.20	0.10	0.10	0.05
Abdomen	1.00	0.30	0.10	0.30	0.70	0.20	0.10	0.10	0.05
Legs	0.50	0.10	0.05	0.10	0.40	0.10	0.05	0.05	0.02
Antennae	0.50	0.10	0.05	0.10	0.40	0.10	0.05	0.05	0.02
Proboscis	0.50	0.10	0.05	0.10	0.40	0.10	0.05	0.05	0.02
Palpi	0.50	0.10	0.05	0.10	0.40	0.10	0.05	0.05	0.02
Abdominal appendages	0.50	0.10	0.05	0.10	0.40	0.10	0.05	0.05	0.02
Total	4.00	1.20	0.40	1.00	2.80	0.80	0.40	0.40	0.20

SCALE for ascertaining the proportionate dimensions of *TIMBER, PLANK &c.*

Tonnage.

Plate 2.



No. Set off the Number of Inches given in the Tables for Ships of 150 Tons, and of 500 Tons, on their respective perpendiculars — then a line drawn through those two points, will show, on the intermediate perpendiculars, the proper dimensions of the corresponding Timbers, Planks, &c.

TABLE XXVII. *Estimated mean daily precipitation*

Date	Estimated mean daily precipitation											
	1	2	3	4	5	6	7	8	9	10	11	12
Jan. 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

2000 m. above

SKETCHES DESCRIBING THE USES, USES, & TROUBLES SHIFTING OF PLANK. Section A. 5.

Page 3

No particular place names were & kept written either,

A. 500.

unlike those in

or similar temporary buildings.

4. When

and when a division of 4 feet

will be allowed?

5. Considerable damage to houses

done by above "Plank灾害."

The sketch shows the principle of working the floor that has occurred and is used at present. It is desired that it be examined.

WANDEL VON WERKMASTERS IN DER MUSIK 12

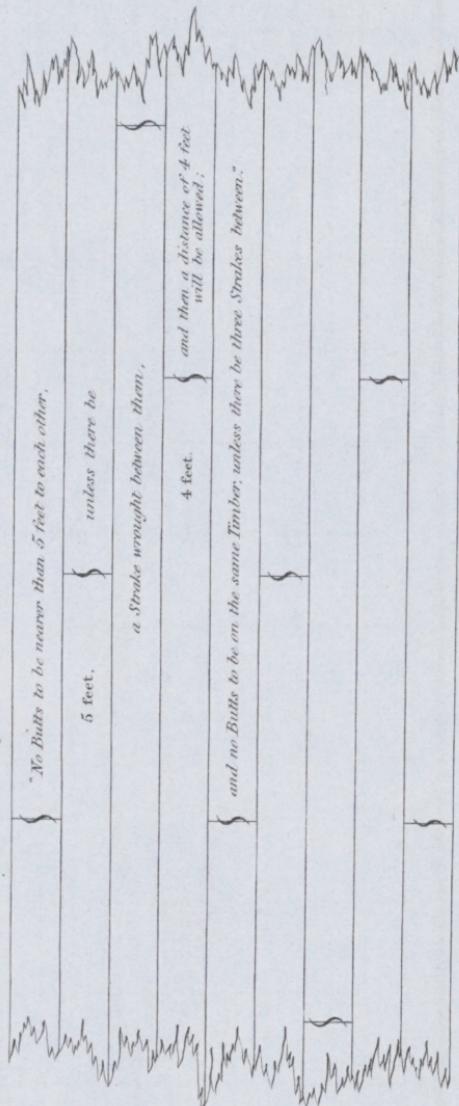
WANDEL

WANDEL VON WERKMASTERS IN DER MUSIK 12  
WANDEL VON WERKMASTERS IN DER MUSIK 12

WANDEL

SKETCH DESCRIPTIVE OF THE REQUIRED SHIFTING OF PLANK.—Section 45.

Plate 3.



The Sketch shows the principle on which the Butts should be arranged, so as to avoid Stepping, which is deemed bad Workmanship.

ALBUM ALBASTREME MEATIE MEDUNO MULATA DE SAGAVE, spongia

Levante de la cortejada de la mulata

Album albastreme meatie meduno mulata de sagave, spongia

**Scale of Inches.**

TABLE OF THE MEASURES AND WEIGHTS OF THE  
UNITED STATES AND CANADA.

Length.

Yards.

Miles.

Fathoms.

Feet.

Inches.

Hands.

Ells.

Sheds.

Ships.

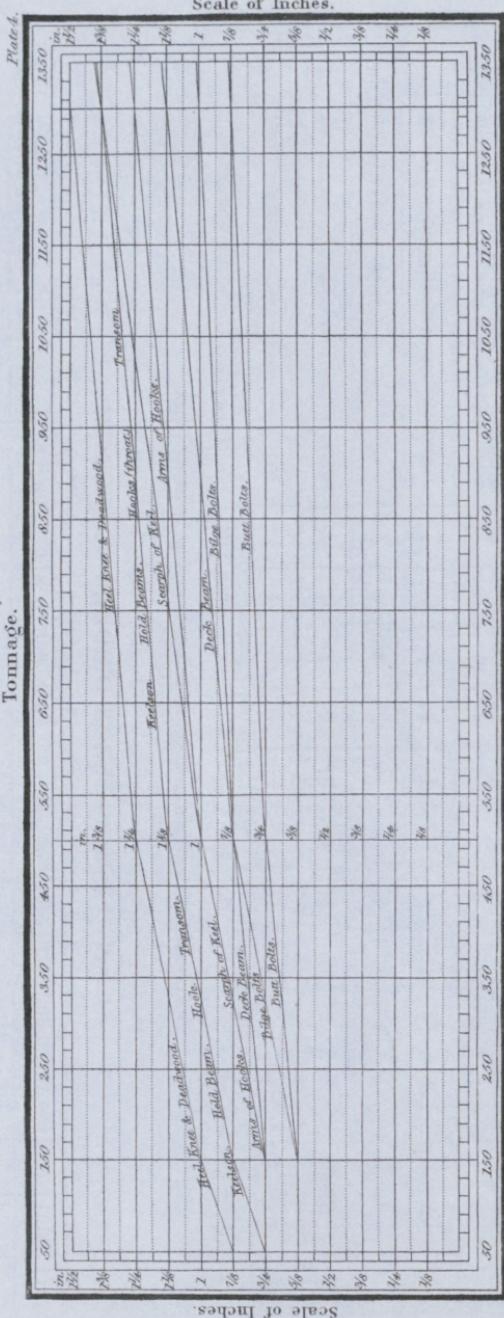
Shoats.

Yards.

and the

*SCALE for ascertaining the proportionate sizes of BOLTS.*

*Tonnage.*



*Tonnage.*

No. Set off the size given in the Rules for Ships of 50 Tons, 150 Tons, 500 Tons & 1300 Tons, on their respective perpendiculars—then a line drawn through these points, will show on the intermediate perpendiculars the correct dimensions of the Bolts required.

TABLE OF THE MEAN DISTANCE OF THE PLANETS

PLANET	MEAN DISTANCE FROM THE SUN	APPROXIMATE DISTANCE IN MILLION MILES
MERCURY	36.7	39.8
VENUS	67.2	72.3
EARTH	92.9	100.0
MARS	141.6	154.5
JUPITER	495.0	546.4
SATURN	876.7	984.0
URANUS	1970.0	2187.0
NEPTUNE	3003.0	3303.0

**SIZES OF BOLTS AND TREENAILS.—Section 46, Page 14.**

TONNAGE .....	50	100	150	200	250	300	350	400	450	500	700	900	1350
Heel Knee and Deadwood and Treenails .....	$\frac{1}{8}$	$\frac{1}{5}$	1	1	$1\frac{1}{6}$	$1\frac{1}{8}$	$1\frac{1}{8}$	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{1}{4}$	$1\frac{1}{4}$	$1\frac{1}{4}$	$1\frac{1}{2}$
Scarpes of Keel and Arms of Breasthooks .....	$\frac{5}{8}$	$\frac{1}{1}\frac{1}{6}$	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{1}{1}\frac{1}{6}$	$\frac{7}{8}$	$\frac{7}{8}$	$\frac{1}{1}\frac{1}{6}$	$\frac{1}{1}\frac{1}{6}$	$\frac{1}{1}\frac{1}{6}$	$\frac{1}{1}\frac{1}{6}$	$\frac{1}{1}\frac{1}{6}$	$\frac{1}{1}\frac{1}{6}$
Kelson, Hold Beam, Transoms and Breasthooks .....	$\frac{3}{4}$	$1\frac{1}{6}$	$\frac{7}{8}$	$\frac{7}{8}$	$1\frac{1}{6}$	1	1	$1\frac{1}{6}$	$1\frac{1}{8}$	$1\frac{1}{8}$	$1\frac{1}{8}$	$1\frac{1}{8}$	$1\frac{1}{8}$
Bilge and Limber Strakes .....	$\frac{9}{10}$	$\frac{5}{8}$	$\frac{5}{8}$	$1\frac{1}{6}$	$1\frac{1}{6}$	$\frac{3}{4}$	$\frac{3}{4}$	$1\frac{1}{6}$	$1\frac{1}{6}$	$1\frac{1}{6}$	$1\frac{1}{6}$	$1\frac{1}{6}$	$1\frac{1}{6}$
Butt Bolts .....	$\frac{9}{10}$	$\frac{5}{8}$	$\frac{5}{8}$	$1\frac{1}{6}$	$1\frac{1}{6}$	$1\frac{1}{6}$	$1\frac{1}{6}$	$1\frac{1}{6}$	$1\frac{1}{6}$	$1\frac{1}{6}$	$1\frac{1}{6}$	$1\frac{1}{6}$	$1\frac{1}{6}$
Deck Beam Bolts .....	$\frac{1}{6}$	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{3}{4}$	$1\frac{1}{6}$	$1\frac{1}{6}$	$1\frac{1}{6}$	$1\frac{1}{6}$	$1\frac{1}{6}$	$1\frac{1}{6}$	$1\frac{1}{6}$	$1\frac{1}{6}$	$1\frac{1}{6}$
Lower Pintle of Rudder .....	$2\frac{1}{4}$	$2\frac{3}{8}$	$2\frac{1}{2}$	$2\frac{5}{8}$	$2\frac{3}{4}$	$2\frac{1}{6}$	$3\frac{1}{8}$	$3\frac{1}{4}$	$3\frac{3}{8}$	$3\frac{1}{2}$	$3\frac{5}{8}$	$3\frac{3}{4}$	4

Note.—The in and out Bolts of all Material Fastenings must be through and clenched.

**NUMBER OF HANGING KNEES.—Section 41, Page 11.**

TONNAGE .....	150	200	250	300	350	400	450	500	550	600	650	700	750	800	900	1000	1100
No. of Knees to Hold Beams, Pairs	4	5	6	7	8	8	9	9	10	10	11	11	12	13	14	15	16
Ditto to Upper Deck Beams, Pairs	4	6	7	8	9	10	11	12	13	14	15	16	17	18	20	22	24

No. 1.—A TABLE exhibiting the different Descriptions of **TIMBER**, of gooo

to the several Terms of Years appointed for Ship

<i>Parts of the Frame of a Vessel.</i>	<i>CLASS Twelve Years.</i>	<i>CLASS Ten Years.</i>	<i>CLASS Nine Years.</i>	<i>CLASS Eight Years.</i>
*FLOORS .....	English } Oak African } Live East-India Teak Morung Saul Greenheart Morra, <i>Iron Bark</i>	The same as in the pre- ceding Class, and admit Live Oak and Red Cedar alternately Adriatic, Spanish, or French Oak South American, Hard or New South Wales Wood Mahogany Cuba Sabicu.	The same as in the pre- ceding Class, and admit Other Foreign White Oak Red Cedar Spanish Chesnut.	The same as in the pre- ceding Class.
+1st FUTTOCKS	English } Oak African } Live East-India Teak Morung Saul Greenheart Morra, <i>Iron Bark</i>	The same as in the pre- ceding Class, and admit Live Oak and Red Cedar alternately Adriatic, Spanish, or French Oak South American Hard Wood Mahogany Cuba Sabicu.	The same as in the pre- ceding Class, and admit Other Foreign White Oak below the light water mark Red Cedar Spanish Chesnut.	The same as in the pre- ceding Class.
2d FUTTOCKS...	English } Oak African } Live East-India Teak Morung Saul Greenheart Morra, <i>Iron Bark</i>	The same as in the pre- ceding Class, and admit Live Oak and Red Cedar alternately Mahogany Cuba Sabicu.	The same as in the pre- ceding Class, and admit Adriatic } Spanish } Oak French } South American Hard Wood Red Cedar.	The same as in the pre- ceding Class.
3d FUTTOCKS... and TOP TIMBERS	English } Oak African } Live East-India Teak Morung Saul Greenheart Morra, <i>Iron Bark</i>	The same as in the pre- ceding Class, and admit Live Oak and Red Cedar alternately Mahogany Cuba Sabicu.	The same as in the pre- ceding Class, and admit Adriatic } Spanish } Oak French } South American, Hard or New South Wales, Wood Red Cedar.	The same as in the pre- ceding Class.
STEM .....	English } Oak African } Live East-India Teak Morung Saul.	The same as in the pre- ceding Class, and admit Mahogany Cuba Sabicu.	The same as in the pre- ceding Class, and admit Adriatic } Spanish } Oak French } South American Hard Wood Red Cedar.	The same as in the pre- ceding Class.
STERN POST...				
TRANSOMS ... KNIGHTHEADS HAWSE TIM- BERS..... APRON ..... +DEADWOOD ...	English } Oak African } Live East-India Teak Morung Saul.	The same as in the pre- ceding Class, and admit Mahogany Cuba Sabicu.	The same as in the pre- ceding Class, and admit Adriatic } Spanish } Oak French } South American Hard Wood Red Cedar.	The same as in the pre- ceding Class.
MAIN KELSON	English } Oak African } Live East-India Teak Morung Saul Greenheart Morra, <i>Iron Bark</i>	The same as in the pre- ceding Class, and admit Adriatic, Spanish, or French Oak South American, or New South Wales Hard Wood Red Cedar Mahogany Cuba Sabicu.	The same as in the pre- ceding Class, and admit Other Foreign White Oak Spanish Chesnut.	The same as in the pre- ceding Class.
BEAMS .....	English } Oak African } Live East-India Teak Morung Saul Greenheart Morra, Mahogany Cuba Sabicu. <i>Iron Bark</i>	The same as in the pre- ceding Class, and admit Adriatic } Spanish } Oak French } South American Hard Wood New South Wales ditto for Beams Red Cedar } only.	The same as in the pre- ceding Class.	The same as in the pre- ceding Class, and admit Other Foreign White Oak Spanish Chesnut.
HOOKS .....				
and KNEES.....				<i>Pitch Pine</i>

\* Black Birch, Larch, Hackmatack, Tamarac, Juniper, Witch Hazel, American Rock Elm, and Cowdie allowed for FLo

† Black Birch allowed for First Futtocks amidships, to the same extent in Ships of the Six Years Class.

‡ So far as regards the Material to be used from the height of two feet above the rabbet of the keel.

Quality, to be used in the TIMBERING of SHIPS, as the same will be applicable to remain on the First Description of the First Class.

CLASS Seven Years.	CLASS Six Years.	CLASS Five Years.	CLASS Four Years.	Parts of the Frame of a Vessel.
The same as in the preceding Class, and admit English Ash Sound second-hand English or African Oak, or Teak. <i>Hackmatack</i> <i>Tamarac</i> <i>Juniper</i> <i>Larch</i>	The same as in the preceding Class, and admit <del>dores</del> <i>Hackmatack</i> <i>Tamarac</i> <i>Juniper</i> Cowdie.	The same as in the preceding Class, and admit Baltic Fir Red Pine Black Birch Witch Hazel Elm or Ash [lity Hard Wood of good qua- English Beech Spruce.	The same as in the pre- ceding Class.	*FLOORS.
The same as in the preceding Class, and admit Other Foreign White Oak above the light water mark Sound second-hand English or African Oak, or Teak. <i>Hackmatack</i> <i>Tamarac</i> <i>Juniper</i> <i>Larch</i>	The same as in the preceding Class, and admit English Ash <i>Larch</i> <i>Hackmatack</i> <i>Tamarac</i> <i>Juniper</i> Cowdie.	The same as in the preceding Class, and admit Baltic Fir Red Pine Black Birch Witch Hazel Elm or Ash [lity Hard Wood of good qua- Spruce.	The same as in the preceding Class, and admit English Beech.	1st FUTTOCKS.
The same as in the preceding Class, and admit Other Foreign White Oak Spanish Chesnut. <i>Hackmatack</i> <i>Tamarac</i> <i>Juniper</i> <i>Larch</i>	The same as in the preceding Class, and admit <del>dores</del> <i>Cowdie</i> <i>Hackmatack</i> <i>Tamarac</i> <i>Juniper</i> Sound second-hand English or African Oak, or Teak.	The same as in the preceding Class, and admit Baltic Fir Red Pine.	The same as in the preceding Class, and admit Elm Ash Black Birch Witch Hazel Spruce.	2d FUTTOCKS.
The same as in the preceding Class, and admit Other Foreign White Oak Spanish Chesnut. <i>Hackmatack</i> <i>Tamarac</i> <i>Juniper</i> <i>Larch</i>	The same as in the preceding Class, and admit Red Pine—Baltic Fir <i>Larch</i> — <i>Hackmatack</i> <i>Tamarac</i> — <i>Juniper</i> Pitch Pine—Cowdie Sound second-hand English or African Oak, or Teak.	The same as in the preceding Class.	The same as in the preceding Class, and admit Yellow Pine Elm Ash Black Birch Witch Hazel Spruce.	3d FUTTOCKS and TOP TIMBERS
The same as in the preceding Class, and admit Other Foreign White Oak Spanish Chesnut. <i>Hackmatack</i> <i>Tamarac</i> <i>Juniper</i> <i>Larch</i>	The same as in the preceding Class, and admit <del>dores</del> <i>Cowdie</i> <i>Hackmatack</i> <i>Tamarac</i> <i>Juniper</i> Cowdie.	The same as in the preceding Class.	The same as in the preceding Class, and admit Black Birch Witch Hazel.	STEM STERN POST.
The same as in the preceding Class, and admit Other Foreign White Oak Spanish Chesnut. <i>Hackmatack</i> <i>Tamarac</i> <i>Juniper</i> <i>Larch</i>	The same as in the preceding Class, and admit <del>dores</del> <i>Cowdie</i> <i>Hackmatack</i> <i>Tamarac</i> <i>Juniper</i> Sound second-hand English or African Oak, or Teak.	The same as in the preceding Class, and admit Baltic Fir Red Pine.	The same as in the preceding Class, and admit Yellow Pine Elm Ash Black Birch Witch Hazel Spruce.	TRANSOMS KNIGHTHEADS HAWSE TIM- BERS APRON ‡DEADWOOD.
The same as in the preceding Class, and admit Pitch Pine Larch Hackmatack Tamarac Juniper Cowdie.	The same as in the preceding Class, and admit Baltic Fir Red Pine American Rock Elm.	The same as in the preceding Class, and admit Ash.	The same as in the preceding Class, and admit Yellow Pine Black Birch Witch Hazel Spruce.	MAIN KELSON.
The same as in the preceding Class, and admit Larch Hackmatack Tamarac Juniper—Cowdie Knees of Fir, Pine, or Spruce.	The same as in the preceding Class, and admit Baltic Fir Pine Sound second-hand English or African Oak, or Teak.	The same as in the preceding Class, and admit Elm Ash.	The same as in the preceding Class, and admit Yellow Pine Black Birch Witch Hazel Spruce.	BEAMS HOOKS and KNEES.

in Midships, to an extent not exceeding one-half the entire length of the Keel, in Ships of the Seven Years' Class.

MEM.—For relaxation in favour of Steam Vessels, *vide* Rules, page 24.

No. 2.—A TABLE exhibiting the different Descriptions of TIMBER, of good

applicable to the several Terms of Years appointed for

<i>Parts of the Outside of a Vessel.</i>	<i>CLASS Twelve Years.</i>	<i>CLASS Ten Years.</i>	<i>CLASS Nine Years.</i>	<i>CLASS Eight Years.</i>
<i>KEEL .....</i> <i>to the</i> <i>1st FUTTOCK</i> <i>HEADS.....</i>	English, African, or Live Oak East-India Teak Red Cedar Foreign White Oak Elm Beech South American, or any Hard Wood Mahogany Spanish Chesnut Cuba Sabicu	The same as in the pre- ceding Class, and admit Pitch Pine Larch Hackmatack Tamarac Juniper Black Birch Cowdie. Spruce	The same as in the pre- ceding Class, and admit Baltic Fir Red Pine	The same as in the pre- ceding Class.
<i>1st FUTTOCK</i> <i>HEADS .....</i> <i>to</i> <i>LIGHT WATER</i> <i>MARK .....</i>	English, African, or Live Oak East-India Teak Red Cedar Foreign White Oak South American, } Hard or New South Wales } Wood Mahogany Spanish Chesnut Cuba Sabicu.	The same as in the pre- ceding Class, and admit Pitch Pine.	The same as in the pre- ceding Class, and admit Baltic Fir Red Pine Larch Hackmatack Tamarac Juniper Cowdie.	The same as in the pre- ceding Class, and admit American Rock Elm.
<i>LIGHT WATER</i> <i>MARK .....</i> <i>to</i> <i>WALES .....</i>	English } Oak African } Oak Live East-India Teak Morung Saul Red Cedar Greenheart Morra Iron Bark	The same as in the pre- ceding Class, and admit Adriatic, Spanish, or French Oak South American, } Hard or New South Wales } Wood Mahogany, Cuba Sabicu.	The same as in the pre- ceding Class, and admit Foreign White Oak Pitch Pine Spanish Chesnut.	The same as in the pre- ceding Class, and admit Baltic Fir Red Pine Larch Hackmatack Tamarac Juniper Cowdie.
<i>WALES .....</i> <i>and</i> <i>BLACKSTRAKES</i>	English } Oak African } Oak Live East-India Teak Greenheart Morra Morung Saul. Iron Bark	The same as in the pre- ceding Class, and admit Red Cedar Mahogany. Cuba Sabicu.	The same as in the pre- ceding Class, and admit Adriatic Spanish } Oak French South American, } Hard or New South Wales } Wood	The same as in the pre- ceding Class, and admit Other Foreign White Oak Pitch Pine Spanish Chesnut.
<i>TOPSIDES.....</i>	English } Oak African } Oak Live East-India Teak Red Cedar Greenheart Morra Morung Saul Iron Bark	The same as in the pre- ceding Class, and admit Pitch Pine. Mahogany. Cuba Sabicu.	The same as in the pre- ceding Class, and admit Adriatic Spanish } Oak French South American, } Hard or New South Wales } Wood	The same as in the pre- ceding Class, and admit Other Foreign White Oak Spanish Chesnut.
<i>SHEERSTRAKES</i> <i>and</i> <i>PLANKSHEER..</i>	English } Oak African } Oak Live East-India Teak Greenheart Morra Morung Saul. Iron Bark	The same as in the pre- ceding Class, and admit Red Cedar Mahogany. Cuba Sabicu.	The same as in the pre- ceding Class, and admit Adriatic Spanish } Oak French South American, } Hard or New South Wales } Wood	The same as in the pre- ceding Class, and admit Other Foreign White Oak Spanish Chesnut. <i>Pitch Pine</i>
<i>WATERWAYS</i>	English } Oak African } Oak Live East-India Teak Red Cedar Greenheart Morra Morung Saul Mahogany. Cuba Sabicu Iron Bark	The same as in the pre- ceding Class, and admit South American, } Hard or New South Wales } Wood Baltic Fir Pitch Pine Red Pine Larch Hackmatack Tamarac Juniper—Cowdie.	The same as in the pre- ceding Class.	The same as in the pre- ceding Class, and admit Foreign White Oak Spanish Chesnut.

\* The use of *Elm*, in Ships above the EIGHT YEARS grade, to be restricted to a height from the lower part of the main Keel, one third of the internal depth of the Ship measured, in midships, from the top of the Limber Strake to the top of the Upper Beams.

Quality, to be used in the OUTSIDE PLANKING of SHIPS, as the same will be  
Ships to remain on the First Description of the First Class.

CLASS <i>Seven Years.</i>	CLASS <i>Six Years.</i>	CLASS <i>Five Years.</i>	CLASS <i>Four Years.</i>	<i>Parts of the Outside of a Vessel.</i>
The same as in the pre- ceding Class.	The same as in the pre- ceding Class.	The same as in the pre- ceding Class, and admit Yellow Pine.	The same as in the pre- ceding Class.	KEEL to the 1st FUTTOCK HEADS.
The same as in the pre- ceding Class.	The same as in the pre- ceding Class.	The same as in the pre- ceding Class, and admit Yellow Pine Black Birch Spruce.	The same as in the pre- ceding Class.	1st FUTTOCK HEADS to LIGHT WATER MARK.
The same as in the pre- ceding Class.	The same as in the pre- ceding Class, and admit American Rock Elm.	The same as in the pre- ceding Class, and admit Yellow Pine.	The same as in the pre- ceding Class, and admit Spruce Black Birch.	LIGHT WATER MARK to WALES.
The same as in the pre- ceding Class, and admit Baltic Fir Red Pine Larch Hackmatack Tamarac Juniper Cowdie.	The same as in the pre- ceding Class.	The same as in the pre- ceding Class, and admit Yellow Pine American Rock Elm.	The same as in the pre- ceding Class, and admit Spruce Black Birch.	WALES and BLACKSTRAKES
The same as in the pre- ceding Class, and admit Baltic Fir Red Pine Larch Hackmatack Tamarac Juniper Cowdie.	The same as in the pre- ceding Class.	The same as in the pre- ceding Class, and admit Yellow Pine American Rock Elm.	The same as in the pre- ceding Class, and admit Spruce Black Birch.	TOPSIDES.
The same as in the pre- ceding Class, and admit Larch Pitch Pine Hackmatack Tamarac Juniper Cowdie.	The same as in the pre- ceding Class, and admit Baltic Fir Red Pine.	The same as in the pre- ceding Class, and admit American Rock Elm.	The same as in the pre- ceding Class, and admit Spruce Yellow Pine Black Birch.	SHEERSTRAKES and PLANKSHEER.
The same as in the pre- ceding Class, and admit Yellow Pine for the up- per deck, provided it has no in and out through fastenings, and the beams are otherwise well secured.	The same as in the pre- ceding Class.	The same as in the pre- ceding Class, and admit Yellow Pine American Rock Elm.	The same as in the pre- ceding Class, and admit Spruce Black Birch.	WATERWAYS.

M.E.M.—For relaxation in favour of Steam Vessels, *vide* Rules, page 24.

No. 3.—A TABLE exhibiting the different Descriptions of TIMBER, of good  
applicable to the several Terms of Years for

<i>Parts of the Inside of a Vessel.</i>	<i>CLASS Twelve Years.</i>	<i>CLASS Ten Years.</i>	<i>CLASS Nine Years.</i>	<i>CLASS Eight Years.</i>
LIMBER STRAKE ....	English African Adriatic Spanish French East-India Teak Morung Saul Red Cedar South American, or New South Wales Hard Wood Mahogany—Greenheart Cuba Sabicu. <i>Iron Bark</i>	The same as in the pre- ceding Class, and admit Other Foreign White Oak Spanish Chesnut.	The same as in the pre- ceding Class.	The same as in the pre- ceding Class, and admit Pitch Pine.
BILGE PLANKS	English African Adriatic Spanish French East-India Teak Morung Saul Red Cedar South American, or New South Wales Hard Wood Mahogany—Greenheart Cuba Sabicu. <i>Iron Bark</i>	The same as in the pre- ceding Class, and admit Other Foreign White Oak Spanish Chesnut.	The same as in the pre- ceding Class.	The same as in the pre- ceding Class, and admit Pitch Pine.
LOWER HOLD ..	English African Adriatic Spanish French East-India Teak Morung Saul Red Cedar South American, or New South Wales Hard Wood Mahogany—Greenheart Cuba Sabicu. <i>Iron Bark</i>	The same as in the pre- ceding Class, and admit Other Foreign White Oak Spanish Chesnut.	The same as in the pre- ceding Class, and admit <i>Pitch Pine</i> .	The same as in the pre- ceding Class, and admit <i>Pitch Pine</i> Baltic Fir Red Pine Larch Hackmatack Tamarac Juniper Cowdie.
CEILING. BETWEEN DECKS--	English African Adriatic Spanish French East-India Teak Morung Saul Red Cedar South American, or New South Wales Hard Wood Mahogany—Greenheart Cuba Sabicu. <i>Iron Bark</i>	The same as in the pre- ceding Class, and admit Other Foreign White Oak Pitch Pine Spanish Chesnut.	The same as in the pre- ceding Class.	The same as in the pre- ceding Class, and admit Baltic Fir Red Pine Larch Hackmatack Tamarac Juniper Cowdie.
SHELF PIECES	English African East-India Teak Morung Saul Red Cedar Greenheart Morra Mahogany Cuba Sabicu. <i>Iron Bark</i>	Adriatic, Spanish, and French Oak.	The same as in the pre- ceding Class, and admit Foreign White Oak Adriatic Spanish French South American, or New South Wales Hard Wood Spanish Chesnut.	The same as in the pre- ceding Class, and admit <i>Pitch Pine</i> .
CLAMPS.....	English African East-India Teak Morung Saul Red Cedar Greenheart Morra Mahogany Cuba Sabicu. <i>Iron Bark</i>	Adriatic, Spanish, and French Oak.	The same as in the pre- ceding Class, and admit Foreign White Oak Adriatic Spanish French South American, or New South Wales Hard Wood Spanish Chesnut.	The same as in the pre- ceding Class, and admit Pitch Pine Larch Hackmatack Tamarac Juniper Cowdie.

Quality, to be used in the INSIDE PLANKING of SHIPS, as the same will be  
Ships to remain on the First Description of the First Class.

CLASS <i>Seven Years.</i>	CLASS <i>Six Years.</i>	CLASS <i>Five Years.</i>	CLASS <i>Four Years.</i>	<i>Parts of the Inside of a Vessel.</i>
The same as in the pre- ceding Class, and admit Baltic Fir Red Pine Larch Hackmatack Tamarac Juniper Cowdie.	The same as in the pre- ceding Class, and admit American Rock Elm.	The same as in the pre- ceding Class, and admit Yellow Pine Black Birch Spruce.	The same as in the pre- ceding Class,	 } LIMBER STRAKE.
The same as in the pre- ceding Class, and admit Baltic Fir Red Pine Larch Hackmatack Tamarac Juniper Cowdie.	The same as in the pre- ceding Class, and admit American Rock Elm.	The same as in the pre- ceding Class, and admit Yellow Pine Black Birch Spruce.	The same as in the pre- ceding Class.	 } BILGE PLANKS.
The same as in the pre- ceding Class.	The same as in the pre- ceding Class, and admit American Rock Elm.	The same as in the pre- ceding Class, and admit Yellow Pine Black Birch Spruce.	The same as in the pre- ceding Class.	 } LOWER HOLD.
The same as in the pre- ceding Class.	The same as in the pre- ceding Class, and admit American Rock Elm.	The same as in the pre- ceding Class, and admit Yellow Pine Black Birch Spruce.	The same as in the pre- ceding Class.	 } CEILING.
The same as in the pre- ceding Class, and admit Pitch Pine Larch Hackmatack Tamarac Juniper Cowdie.	The same as in the pre- ceding Class, and admit Baltic Fir Red Pine American Rock Elm.	The same as in the pre- ceding Class, and admit Yellow Pine.	The same as in the pre- ceding Class, and admit Spruce Black Birch.	 } BETWEEN DECKS.
The same as in the pre- ceding Class, and admit Baltic Fir Red Pine.	The same as in the pre- ceding Class, and admit American Rock Elm.	The same as in the pre- ceding Class, and admit Yellow Pine.	The same as in the pre- ceding Class, and admit Spruce Black Birch.	 } SHELF PIECES.
The same as in the pre- ceding Class, and admit Baltic Fir Red Pine.	The same as in the pre- ceding Class, and admit American Rock Elm.	The same as in the pre- ceding Class, and admit Yellow Pine.	The same as in the pre- ceding Class, and admit Spruce Black Birch.	 } CLAMPS.

## No. 4.

## FORM OF THE REPORT OF SURVEY.

No. — Survey held at — Date — 185— on the — Master —  
 Tonnage  $\begin{cases} \text{Old} \\ \text{New} \end{cases}$  Built at — When built — By whom built —  
 Owners — Port belonging to — Destined Voyage — If Surveyed while building, Afloat, or in Dry Dock —

Length aloft	Feet.	Inches.	Extreme Breadth	Feet.	Inches.	Depth of Hold	Feet.	Inches.
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## SCANTLINGS OF TIMBER.

Room and Space .....	Inch.	Moulded
Floors.....sided		
1st Foothooks .....		
2d Ditto .....		
3d Ditto .....		
Top Timbers .....		
Deck Beams No. .... Space	Average	
Hold Beams No. .... Space	Average	
Keel .....		
Kelsons .....		
Scarps of Ditto .....		

## THICKNESS OF PLANK.

OUTSIDE.	Inch.	INSIDE.	Inch.
Keel to Bilge		Limber Strakes .....	
Bilge Planks		Bilge Planks .....	
Bilge to Wales		Ceiling in Flat.....	
Wales .....		Ditto Bilge to Clamp	
Short Hoods		Hold Beam Clamps..	
Topsides .....		Deck Beam Ditto ...	
Sheerstrakes		Ceiling 'twixt Decks	
Plankshears		Hold Beam Shelfs ..	
Waterways ...		Deck Beam ditto.....	
Upper Deck			

## SIZE OF BOLTS IN FASTENINGS, DISTINGUISHING WHETHER COPPER OR IRON.

	Copper Inches.	Iron Inches.	Copper Inches.	Iron Inches.
Heel-Knee and Deadwood abaft ...			Bolts through Bilge and Limber	
Scarps of Keel ..... No.			Strakes .....	
Floor Timber Bolts .....			Butt End Bolts .....	
Kelson ditto .....			Lower Pintle of the Rudder .....	
Transoms and throats of Hooks.....			Hold Beam .....	
Arms of Hooks .....			Deck Beam .....	

**TIMBERING.**—The Space between the Floor Timbers and Lower Foothooks in this Vessel is — Inches. The Space between the Top Timbers is — Inches. The Stem, Stern-Post consist of —, the Transoms, Aprons, Knightheads, Hawse Timbers, and Deadwood, of — and are — free from all defects.

The Floors consist of — The First Foothooks of — Timber. The Second Foothooks of — The Third Foothooks of — The Top Timbers of —

The Shifts of the first and second Foothooks are not less than —

[N.B. When less than prescribed by the Rule, state how many.]

The rest of the Shifts of the Frames are —

The Frame is — squared from the first Foothook Heads upwards, and — free from sap, and from thence downwards the Frame is —

The alternate Frames are — bolted together to the Gunwale.

[N.B. If not, state how bolted.]

The Butts of the Timbers are — close together; their thickness not less than — of the entire moulding at that place.

The frame is — chocked with — Butt at each end of the chock.

The Main Kelson is \_\_\_\_\_ and free from all defects. The False Kelson is \_\_\_\_\_

The Deck Beams consist of \_\_\_\_\_ The Hold Beams of \_\_\_\_\_ The Knees of \_\_\_\_\_

**PLANKING OUTSIDE.**—From the Keel to the Height defined in Note to Table 2, the Plank is \_\_\_\_\_

From the above-named height to the Light Water Mark \_\_\_\_\_

From the Light Water Mark to the Wales \_\_\_\_\_

The Wales and Blackstrakes are \_\_\_\_\_ The Topsides \_\_\_\_\_

The Sheerstrakes \_\_\_\_\_ and Plankshears \_\_\_\_\_ The Waterways \_\_\_\_\_

The Decks \_\_\_\_\_ State of \_\_\_\_\_

The Shifts of the Planking are not less than — feet — inches. [N.B.—If less than prescribed by the Rule, state whether general or partial, and if partial, in what part of the Ship.]

The Planking is wrought \_\_\_\_\_ between.

**PLANKING INSIDE.**—The Limber-strakes are \_\_\_\_\_ the Bilge Planks \_\_\_\_\_

The Ceiling, Lower Hold, \_\_\_\_\_ Between Decks, Shelf Pieces \_\_\_\_\_

Clamps \_\_\_\_\_

**FASTENINGS.**—To Hold Beams \_\_\_\_\_

Deck Beams \_\_\_\_\_

Number of Breasthooks \_\_\_\_\_ Pointers \_\_\_\_\_ Crutches \_\_\_\_\_

Butts End Bolts are of \_\_\_\_\_ in the Bottom, and — Bolt in each Butt End through and clenched.

Bilge and Limber Strakes — bolted through and clenched. Treenails of \_\_\_\_\_ How made \_\_\_\_\_ General Quality of Workmanship \_\_\_\_\_

*We certify that the preceding is a correct description of the above-named Vessel.*

*Builder's Signature* \_\_\_\_\_ *Surveyor's Signature* \_\_\_\_\_

Her Masts, Yards, &c. are in — condition, and sufficient in size and length.

She has SAILS. **CABLES, &c.**

No.			<b>ANCHORS,</b>		
			Fathoms.	Inches.	and their Weights No. Weight.
	Fore Sails,	Chain .....			Bower .....
	Fore Top Sails,	Hempen Stream Cable			Stream .....
	Fore Topmast Stay Sails,	Hawser .....			Kedge.....
	Main Sails,	Towlines.....			
	Main Top Sails, and	Warp .....			
		All of ..... quality.			

Her Standing and Running Rigging \_\_\_\_\_ sufficient in size and \_\_\_\_\_ in quality.

She has \_\_\_\_\_ Long Boat and \_\_\_\_\_ The present state of the Windlass is \_\_\_\_\_

Capstan \_\_\_\_\_ Rudder \_\_\_\_\_ Pumps \_\_\_\_\_

#### *General Remarks.—Statement and Date of Repairs.*

If Sheathed, Doubled, Felted, or Coppered \_\_\_\_\_

When last done \_\_\_\_\_

I am of opinion this Vessel should be classed \_\_\_\_\_

The Amount of the Fee ..... £ : : \_\_\_\_\_

is received by me,

Special ..... £ : : \_\_\_\_\_

Certificate (if required) £ : : \_\_\_\_\_

*Committee's Minute* — 185 —

*Character assigned* —

No. 5. IRON SHIPS

No \_\_\_\_\_ Survey held at \_\_\_\_\_ Date \_\_\_\_\_ 185\_\_\_\_\_ on the \_\_\_\_\_ Master \_\_\_\_\_  
Tonnage—Gross \_\_\_\_\_ Engine Room \_\_\_\_\_ Register \_\_\_\_\_ Built at \_\_\_\_\_  
When built \_\_\_\_\_ By whom built \_\_\_\_\_ Owners \_\_\_\_\_ Port belonging to \_\_\_\_\_  
Destined Voyage \_\_\_\_\_ If Surveyed Afloat or in Dry Dock \_\_\_\_\_

	Feet.	Inches.	Horse. No.
Length aloft .....			
Extreme Breadth .....			
Depth from Beam to top of Floor .....			
Distance between Floors amidships .....			
" " " forward and aft			
" " " Ribs amidships.....			
" " " forward and aft..			
Floors, Size of Angle Iron, and No. at bottom of Floor plate .....	In.	In.	
" depth and thickness of Plate at mid line.....	8ths.		
Do. at turn of bilge .....			
" Size of Reversed Angle Iron, and No. at top of Floor Plate...			
Ribs, Size of Angle Iron, single or double			
" " Reversed Iron, if to every frame or every frame...			
Beams, Deck (No. ) double or single Angle Iron .....			
" " depth and thickness of Plate amidships .....			
" " double or single Angle Iron, on lower edge .....			
" " average space between.....			
" " if wood (No. ) sided and moulded.....			
Hold, (No. ) double or single Angle Iron .....			
" " depth and thickness of Plate amidships .....			
" " double or single Angle Iron, on lower edge.....			
" " average space between.....			
" " if wood (No. ) sided and moulded.....			
Paddle, wood, sided and moulded or if Iron, size of Plate Engine			
Keelson, wood, sided and moulded, iron size of plate, if Box, give sketch and dimensions.....			
" Side or Bilge .....			
" Number .....			
Power of Engines .....			
Sketch, when necessary.			
Stem, if bar iron, moulding and thickness			
" if plate iron, breadth and thickness			
Stern-post, if bar iron, moulding and thickness .....			
" if plate iron, breadth and thickness .....			
Keel, if bar iron, depth and thickness.....			
" if plate iron, breadth and thickness.....			
Garboard Plates, thickness.....			Description of Iron.
" to bilge .....			
Bilge " .....			
" to Wales .....			
Wales .....			
Topsides .....			
Sheer-strakes .....			
Plankshears.....			Material.
Gunwale Plate or Stringer.....			
Waterway.....			
Deck.....			
Ceiling in flat .....			
Bilge Planks inside.....			
Ceiling from Bilge to Clamps .....			
Hold Beam Clamps .....			
" " Shelf .....			
" " Stringers .....			
Ceiling between Decks			
Stringers " "			
Deck Beam Clamps .....			
" " Shelf .....			
Stringers in Hold .....			
Deck, Lower .....			

Transoms, material \_\_\_\_\_ or, if none, in what manner compensated for.

Knight-heads    „                          } are they free from defects?                          Knight-heads

The Ribs extend in one length from \_\_\_\_\_ to \_\_\_\_\_ riveted through plates with — in.  
rivets about \_\_\_\_\_ apart.

The reverse angle irons on the floors extend in one length across the middle line from — to —  
" " on the ribs " " " from — to —

Keelson, if wood, length of scarph \_\_\_\_\_ if iron, how are the various lengths connected? Plates, Garboard, double or single riveted to keel, with rivets — ins. diameter, averaging  
in from centre to centre of rivet.

,, edges from Garboards to turn of bilge, worked carvel with a lining piece — in. thick, or clench, double or single riveted; rivets — in. diameter, averaging — ins. from centre to centre of rivets.

,, butts from Garboards to turn of bilge, worked carvel with a lining piece — thick, double or single riveted; rivets — in. diameter, averaging — ins. from centre to centre of rivets. Do the lining pieces lap over and rivet through the lands of the strake below?

,, edges from bilge to wales, worked carvel with a lining piece — thick, or clench, double or single riveted; rivets — in. diameter, averaging — ins. from centre to centre of rivets.

butts from bilge to wales, worked carvel with a lining piece — thick, double or single riveted; rivets — in. diameter, averaging — in. from centre to centre of rivets.

Do the lining pieces lap over and rivet through the lands of the stake below ? and edges to wales and to plankshears, worked carvel with a lining piece — thick, or clencher, double or single riveted ; rivets — in. diameter, averaging — ins. from centre to centre of rivets.

Planksheer, how secured to the plating of the sides { Explain by a sketch, }

Waterway      „      „      planksheer and to the beams if necessary. }

Side trussing \_\_\_\_\_ breadth and thickness of plates \_\_\_\_\_ how secured \_\_\_\_\_

Deck Beams, now secured to the side \_\_\_\_\_  
Hold \_\_\_\_\_

Paddle " " "

No. of breasthooks —— crutches —— how are pointers compensated?

What description of iron is used for the angle iron and bar iron in the vessel?

Builder's Signature

*Builder's Signature.*

**WORKMANSHIP.**—Are the lands or laps of the clench work in all cases sufficiently wide to take the rivets and support the strain on them?

Do the edges of the carvel work and of the butts fay close together throughout their length, without requiring any making good of deficiencies?

Do the fillings between the ribs and plates fill in all solid with sliver pieces, or are they in short lengths ?

Do the holes for rivetting plate to lining piece, or plate to plate, &c., answer well to each other ? ——— and are the rivet holes well and sufficiently counter sunk in the outer plate ?

Are there any rivets which either break into or have been put through the seams or butts of the plating ?

Was the plating caulked internally in the wake of the frames or ribs ?

Her Masts, Yards, &c., are in ——— condition, and sufficient in size and length.

No.	She has SAILS.	Fathoms.	CABLES, &c.	Inches.	ANCHORS, and their weights.
	Fore Sails,		Chain .....		Bower,
	Fore Top Sails,		Hempen Stream Cable		Stream,
	Fore Topmast Stay Sails,		Hawser .....		Kedge,
	Main Sails,		Towlines.....		
	Main Top Sails and		Warp .....		
			All of — quality.		

Her Standing and Running Rigging ——— sufficient in size, and ——— in quality

She has ——— Long Boat and ———

The present state of the Windlass is ——— Capstan ——— and Rudder ———  
Pumps ———

#### GENERAL REMARKS.

*Statement and date of repairs; extent of corrosion (if any) both internally and externally; and condition of rivets.*

In what manner are the surfaces preserved from oxidation ?

I am of opinion this vesssl should be classed ———

The amount of the Fee ..... £ : : is received by me,

Special ..... £ : :

Certificate (if required) ..... £ : :

*Committee's Minute* ——— 185—

*Character assigned* ———

No. 6.

FORM OF REPORT OF ANNUAL SURVEY.

No. — Survey held at — Date — 18 — on the —  
 Master — Tonnage — Built at — When built — By whom  
 built — Owners — Port belonging to — Destined  
 Voyage — If Surveyed Afloat or in Dry Dock —

Last Survey, No. — Port of — Classed —

The present condition of the

Decks .....	Plank (Bottom) & Counter.	Copper .....
Waterways .....	Treenails.....	Windlass and Capstan .....
Comings .....	Breasthooks and Stemson...	Pumps.....
Upper Deck Beams and Fastenings .....	Transoms, Pointers, and Crutches .....	Boats .....
Lower Deck Beams and Fastenings .....	Timbers of the Frame .....	Masts, Yards, &c. .....
Plankshears .....	Kelsons .....	Sails.....
Sheerstrakes .....	Clamps and Shelves.....	Anchors, No. of.....
Topsides .....	Ceiling.....	Cables.....
Wales .....	Rudder .....	Hawsers and Warps .....
		Standing & Running Rigging

General Observations and Opinion,

Committee's Minute — 18 —

Character assigned —

Certificate (if required)

No. 7.

FORM OF CERTIFICATE OF CLASSIFICATION.

*Lloyd's Register of British and Foreign Shipping.*

ESTABLISHED 1834.

No. —



London,

18

OFFICE, No. 2, White Lion Court, Cornhill.

These are to Certify, That the — of —  
 — Master, — Tons, bound to —, has been  
 Surveyed by the Surveyors to this Society, and reported to be, on the —

— her intended Voyage, and that she has been CLASSED in the REGISTER  
 BOOK of this Society on the List of Ships of the —

Witness my Hand,

Charge s.

Chairman.

, Secretary.

## FORM OF CERTIFICATE FOR VESSELS NAVIGATED BY STEAM.

LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING.

## Certificate for Vessels navigated by Steam.

Day of \_\_\_\_\_, 18\_\_\_\_

do certify that the whole of the Boilers and machinery of the Steam Vessel \_\_\_\_\_ belonging to \_\_\_\_\_, whereof \_\_\_\_\_ is Master, \_\_\_\_\_ Tons, have been carefully inspected and examined by \_\_\_\_\_ at \_\_\_\_\_, and that \_\_\_\_\_ find the same to be at this time in good order and safe working condition.

Witness \_\_\_\_\_

Manufacturing Engineer.

The following is a true Account of the Particulars of the machinery of the Steam Vessel \_\_\_\_\_ above named:

## ENGINES.

Number .....  
 Diameter of Cylinder .....  
 Length of Stroke .....  
 No. per Minute .....  
 Estimated Power .....  
 Diameter of Paddle-wheels .....  
 Length of Paddles .....  
 Breadth of Paddles .....  
 No. of Paddles .....  
 On what motion .....  
 No. of revolutions per minute .....  
 Size of the holding-down bolts .....  
 Condition of ditto .....  
 Maker of the Engines .....  
 Age of the Engines .....  
 When they were last taken out .....  
 Present condition of the Engines .....  
 Can injection water be taken from the Bilge in the event of a serious Leak .....  
 \_\_\_\_\_  
 \_\_\_\_\_

## FUEL.

Where stowed .....  
 If in contact with boiler .....  
 If not, what space between Coal Boxes and Boiler .....  
 For what quantity room is provided .....  
 If liable to get wetted.....

## BOILERS.

Whether iron or copper .....  
 Working pressure .....  
 If it can be increased without going into the Boiler .....  
 What are the means of changing the water while the Boilers are at work .....  
 Maker of the Boilers .....  
 Age of the Boilers .....  
 When they were last taken out .....  
 Present condition .....  
 Number of feed pumps .....  
 How attached .....  
 What clear space upon the top-side of the boiler from wood-work .....  
 Do. at the end from ditto .....  
 Do. round the chimney from do. ....

## PUMPS.

No. of hand pumps .....  
 Can they be worked by the Engine .....  
 If any attached to engine, their purpose and size .....  
 No. of force-pumps .....  
 No. of branches and hose of sufficient length to reach to every part of the vessel .....

Manufacturing Engineer.

